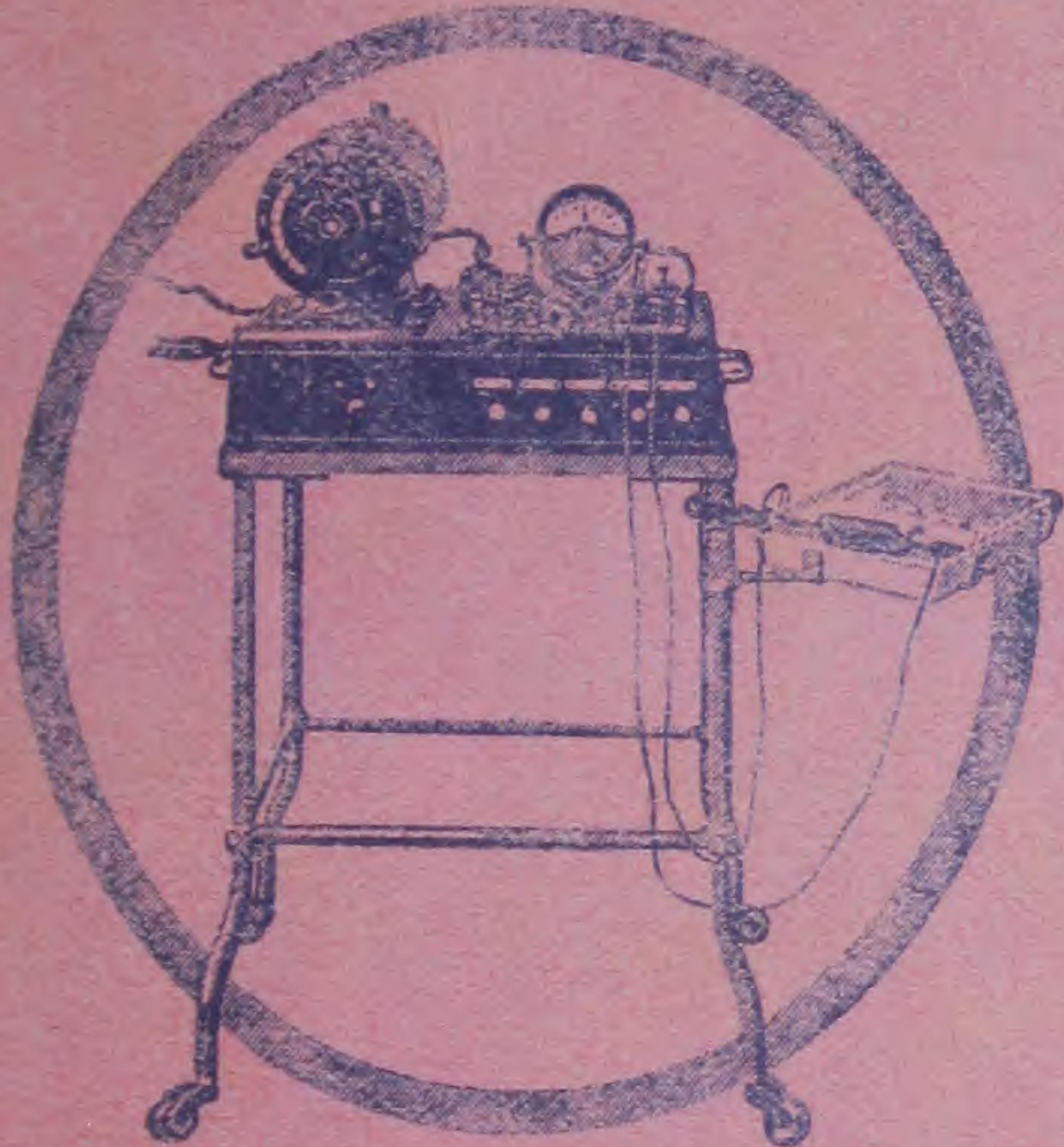


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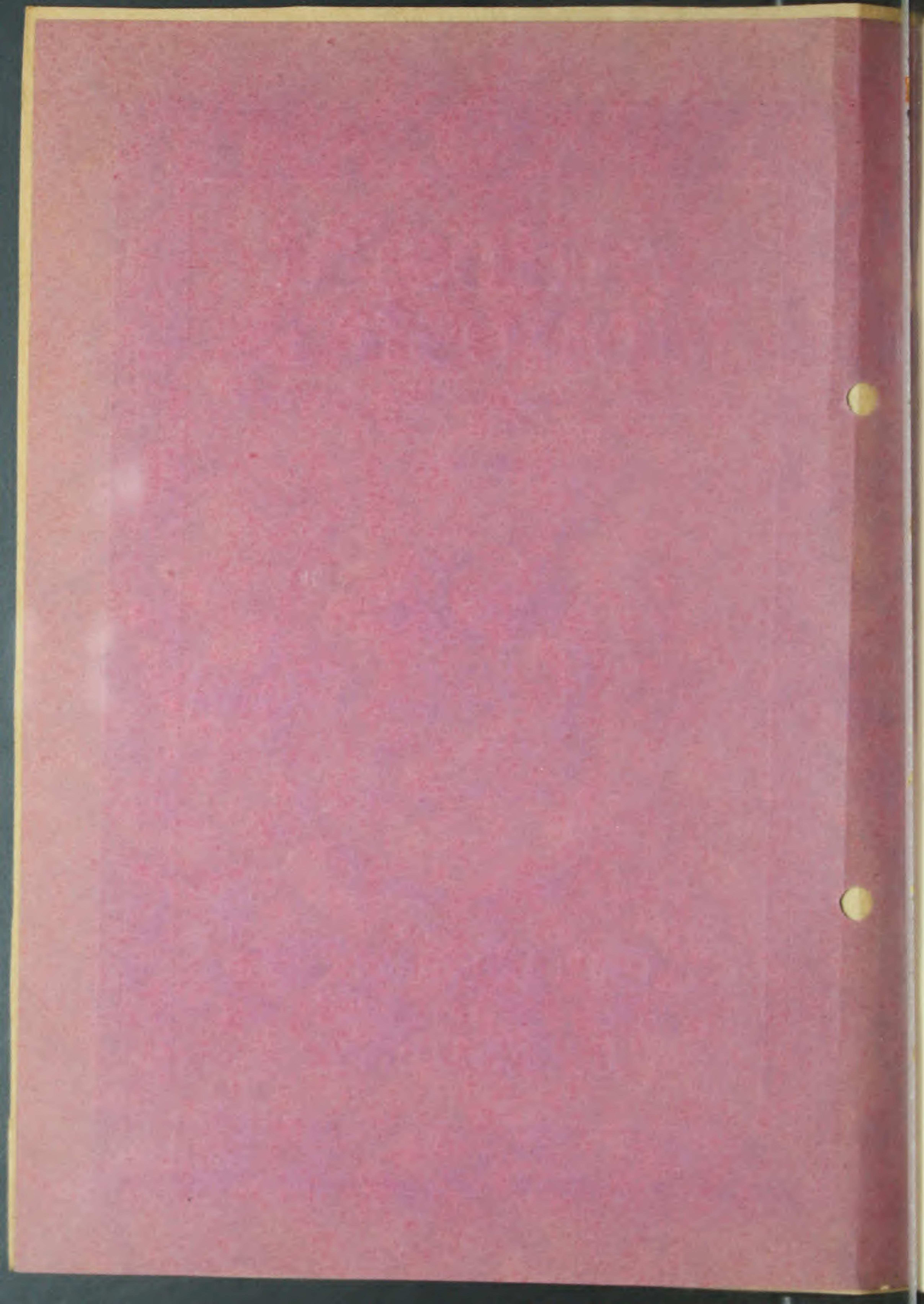
# Variosstat Monostats

*Electro-Medical Function Apparatus  
and Accessories*



Koch & Sterzel  
A. G.  
DRESDEN-A.

AZ-51



**List E 24**

**ELECTRO-MEDICAL  
JUNCTION APPARATUS  
AND ACCESSORIES**



**KOCH & STERZEL**  
A. - G.   
**D R E S D E N - A. 24**

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## Introduction

The progressive knowledge of the physiological effects of electric current on a living organism began with Galvani's memorable observations of frog's muscles in 1786. This forms the basis on which rose the medical practice of electricity in the diagnostic and therapeutic provinces.

**Electro-Diagnostic** is formed on the changes, brought about in the physiological reactions of sick nerves and muscles in contrast to sound ones. The physiological reactions are in fact but the biological consequences of the chemical-physical changes produced by the electric current in the tissue. These make themselves felt in changed reactions characteristic of certain diseases. Both galvanic and faradic currents are in use.

The **Electro-Therapy** utilizes the calming and soothing effects of the electric current. The galvanic, faradic or sinusoidale currents as well as high frequency currents are employed in all possible variations of application. Its province is extremely large even if purely scientific researches are only drawn into consideration and all is left aside that early enthusiasm and exaggeration, as often in medical practice, anticipate in an excessive hopefulness. There is a considerable number of diseases with which electricity is actually applied for medical cure and proved by experience. Apart from "Diathermy", that is use of high frequency currents — this medical practice has a sphere of its own, compare our list on Diathermy Apparatus print V 110 — chiefly the following groups of diseases may be treated by the different electro-therapeutic methodes:

1. Diseases of the central nerve system and of the peripheral nerves on functional or organic basis, e. g. neurasthenia, hysteria, functional neurosis, neuralgia, neuritis, paralysis, tabes and almost all other diseases of the brain and of the spinal marrow,

2. diseases of the muscles, myalgies, paralysis, common and progressive atrophies,
3. diseases of the joints,
4. diseases of the heart and of the vasculars,
5. diseases of the digestive organs, atony of the stomach and the bowels, cardio and pyloro spasms, stomach neurosis, atonic and spastic obstipation, hemorrhoids,
6. diseases of the respiratory organs, especially of the larynx,
7. diseases of the urine and sexual organs,
8. diseases of the skin, e. g. pruritus cutaneus, congelation, warts, hypertrichosis etc.,
9. diseases owing to endocrinical derangements as basedow, tetany etc.

The employment of electricity has further value with regard to therapeutics in form of electrolysis and iontocataphoresis. By means of the latter it is possible to insert remedies to any depth of the body. The former is applied for the destruction of the tissues when removing hairs, warts, moles etc. Finally there is still to be mentioned electro-cautery, which is extensively used; but to call it a direct operation of the electric current on the organism is as little justified as using this term for endoscopy or for the employment of electric light to examine cavities.

The indications for the different electro-therapeutic measures and technics are to be found in numerous treatises, published in books or magazines, the enumeration of which would be impossible.

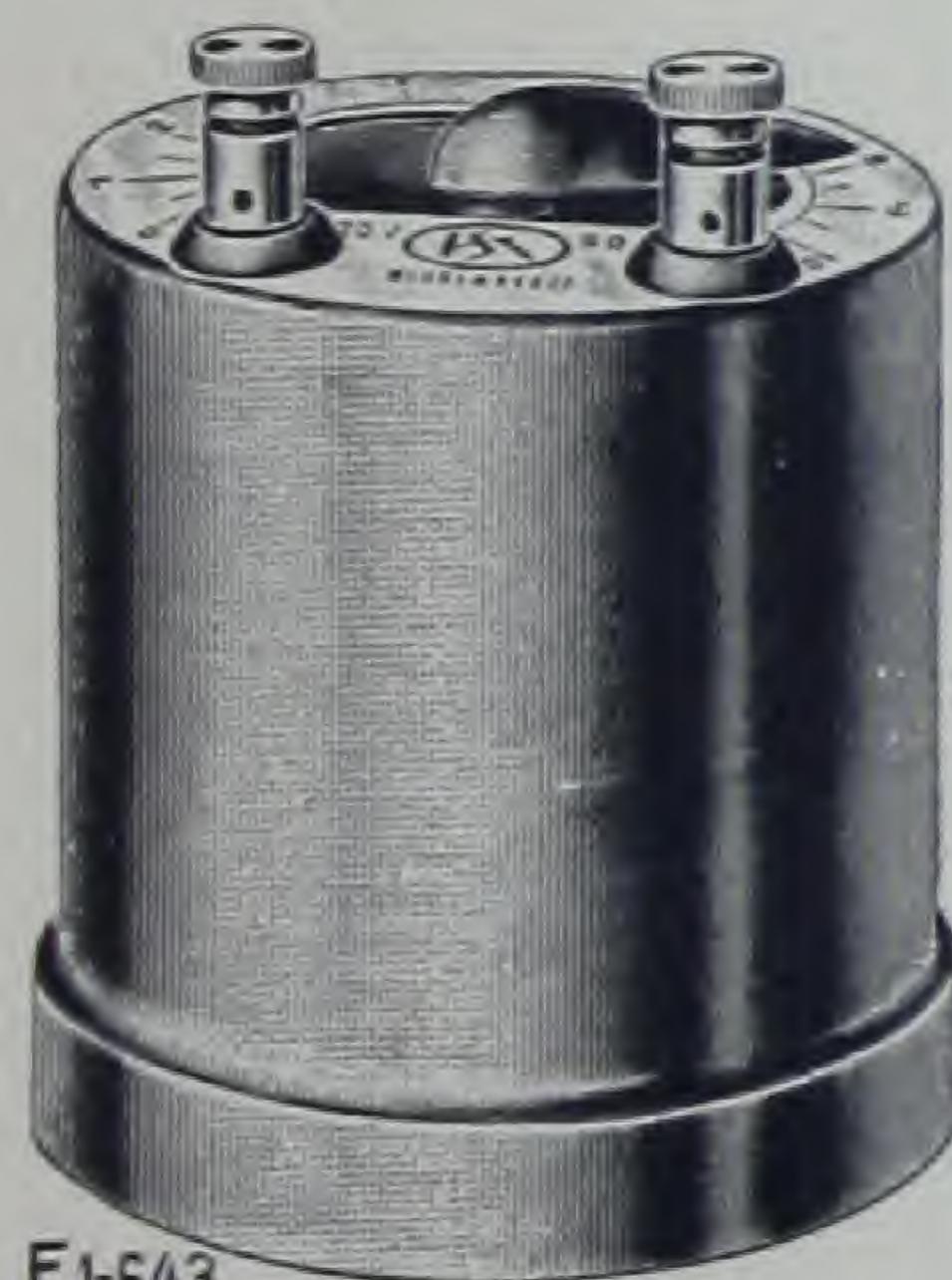
# Electro-Medical Junction-Apparatus

## Section A

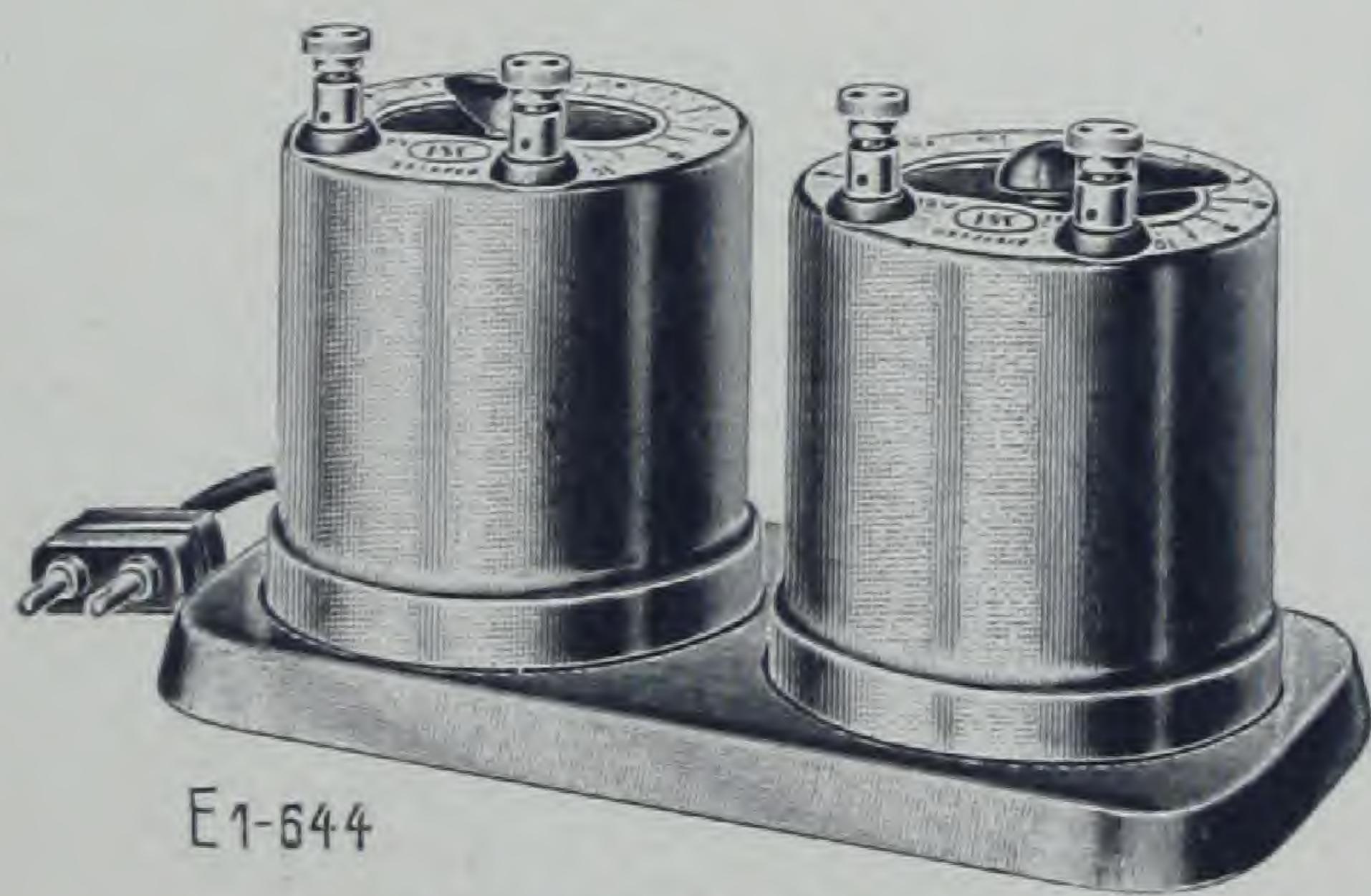
### Monostats

(without earth connection)

As we felt that physicians were justified to wish for small and handy consequently cheap Junction-Apparatus to be applied to one purpose of treatment in particular, we accomplished our Monostats. We made a point of producing great power at a low current consumption with a pleasant form and a small weight. The apparatus required for converting and regulating the current (transformer and rheostat) are placed in a nickleplated metal box with a diameter of 110 mm and a height of 125 mm. It is connected with a plug box cover of the alternating current of the lighting mains through a connecting cable 1,10 m long. Two junction terminals mounted on the protecting box serve to supply the effective current. A turning handle, designed in the box axis enables to regulate the current by means of a rheostat fixed inside the apparatus. The adjustment respectively the intensity



E 413



E 413

E 413, E 423 with E 430

of the effective current is to be read on a scale. The exact working voltage for the different current consumption apparatus such as forehead-lamps, endoscopes, galvano-cautery burners etc., is adjusted by the tenfold scale and every time reproduced, steady voltage of the system provided. The adjustment of the net current is automatical by means of the turning handle of the rheostat, as soon as it is turned past zero in the direction of the clockhand.

Our Monostats can be delivered in three different types:

**1. Monostats for Sinusoidale Faradisation:**

With about 10 watts efficiency this apparatus transmits the most sensitive application of an alternating current of 50 cycles in a tension sphere of 0—60 volts. All injuries of the patient resulting from ground connection current are entirely avoided by the perfect insulation of the different transformer coils.

**2. Monostats for Endoscopy:**

This apparatus is suitable for the use of all forehead-lamps and endoscopes, quoted on pages 22—26 in this list, all other endoscopical instruments for testing purposes and use of low-current put on the market, included. About 10 watts efficiency, tension regulation of 0—11 volts.

**3. Monostats for Cautery:**

The efficiency of 50 watts is entirely sufficient for all burners used by practitioners and specialists, which are quoted in this list on pages 19—21, the porcelain burners excepted (Cat. No. E 3550—58), rarely applied and for special purposes only. The apparatus is equipped with a strong connection cable 1,5 m long (Cat. No. E 3010).

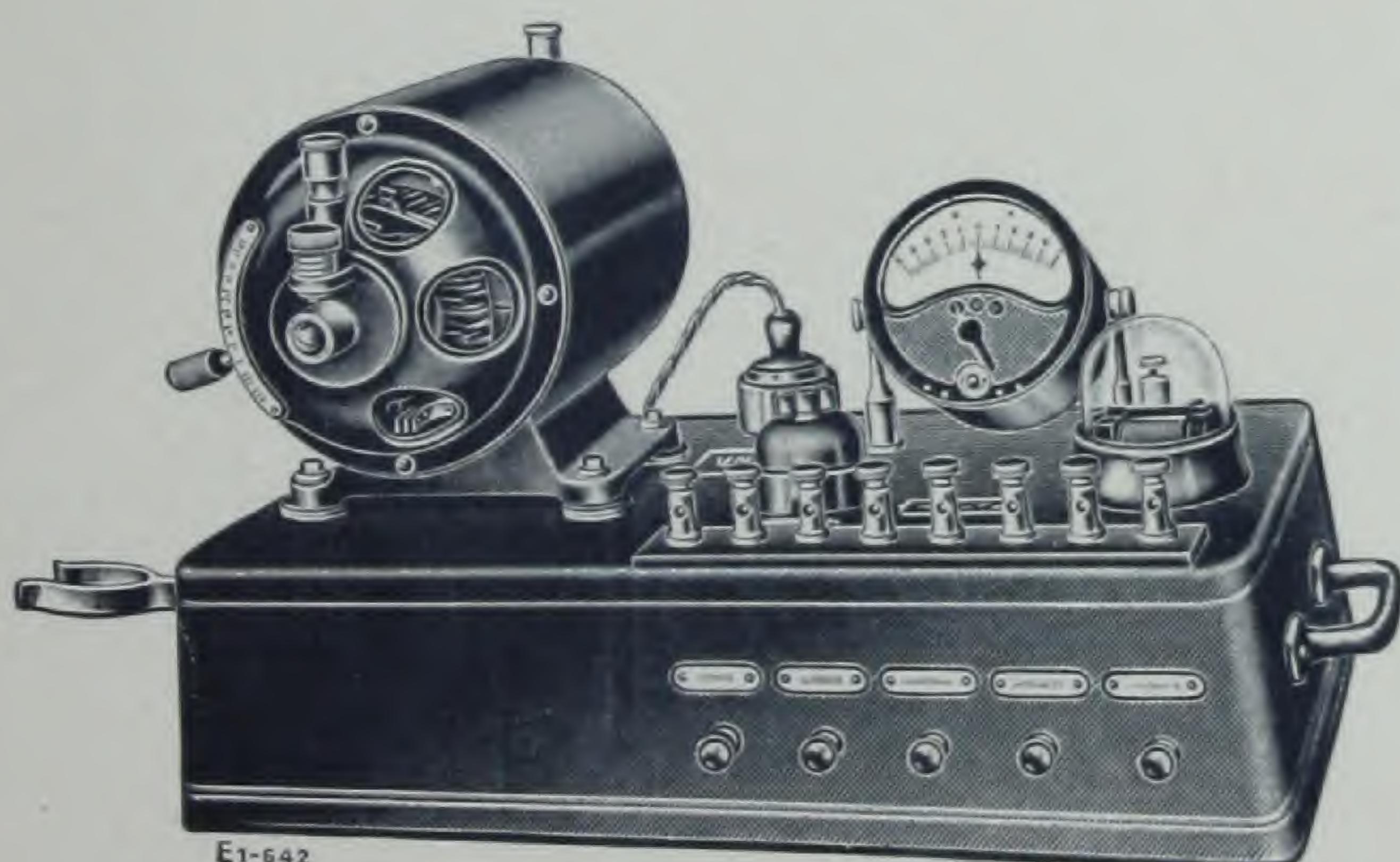
Types			
Cat. No.	Type	Arranged for	To connect with
<b>E 403</b>	Monostat MF	Sinusoidale Faradisation	110 volts
<b>E 405</b>			220 volts
<b>E 413</b>	Monostat ME	Endoscopy	110 volts
<b>E 415</b>			220 volts
<b>E 423</b>	Monostat MK	Cautery	110 volts
<b>E 425</b>			220 volts
<b>E 430</b>	Socket of sheet-metal, black enamelled with deepenings for mounting a Monostat each for endoscopy and cautery often simultaneously used in practice.		

## Section B

# Variostats

In all cases, when electricity is to be employed chiefly for therapeutic or diagnostic purposes, it is necessary to provide a capable Junction-Apparatus for the production of various kinds of current in turn. Already in 1910 we took up the manufacturing of such an apparatus, which we called "Variostat". The apparatus in question is a model, the value of which had been proved for many years in several hundred places of this country and abroad.

The transformers, regulation, and switch apparatus for the different effective circuits are placed in a metal case black enamelled, 52 cm long, 28 cm wide, and 14 cm high. The motor generator and the other auxiliary apparatus, the current-carrying or leakage clamps included are fastened on the top. The switch system on page 8 shows the connection without ground contact of the different apparatus. Only the motor armature M and the exciting coils F of the driving motor are in direct junction with the network by intermediate connection of a starter and regulator. From a separate winding of the lengthened armature is taken first the direct current for the galvanisation outfit above the commutator G and second an alternating current above the slip rings W for use of the cautery or endoscopy



E 1-642

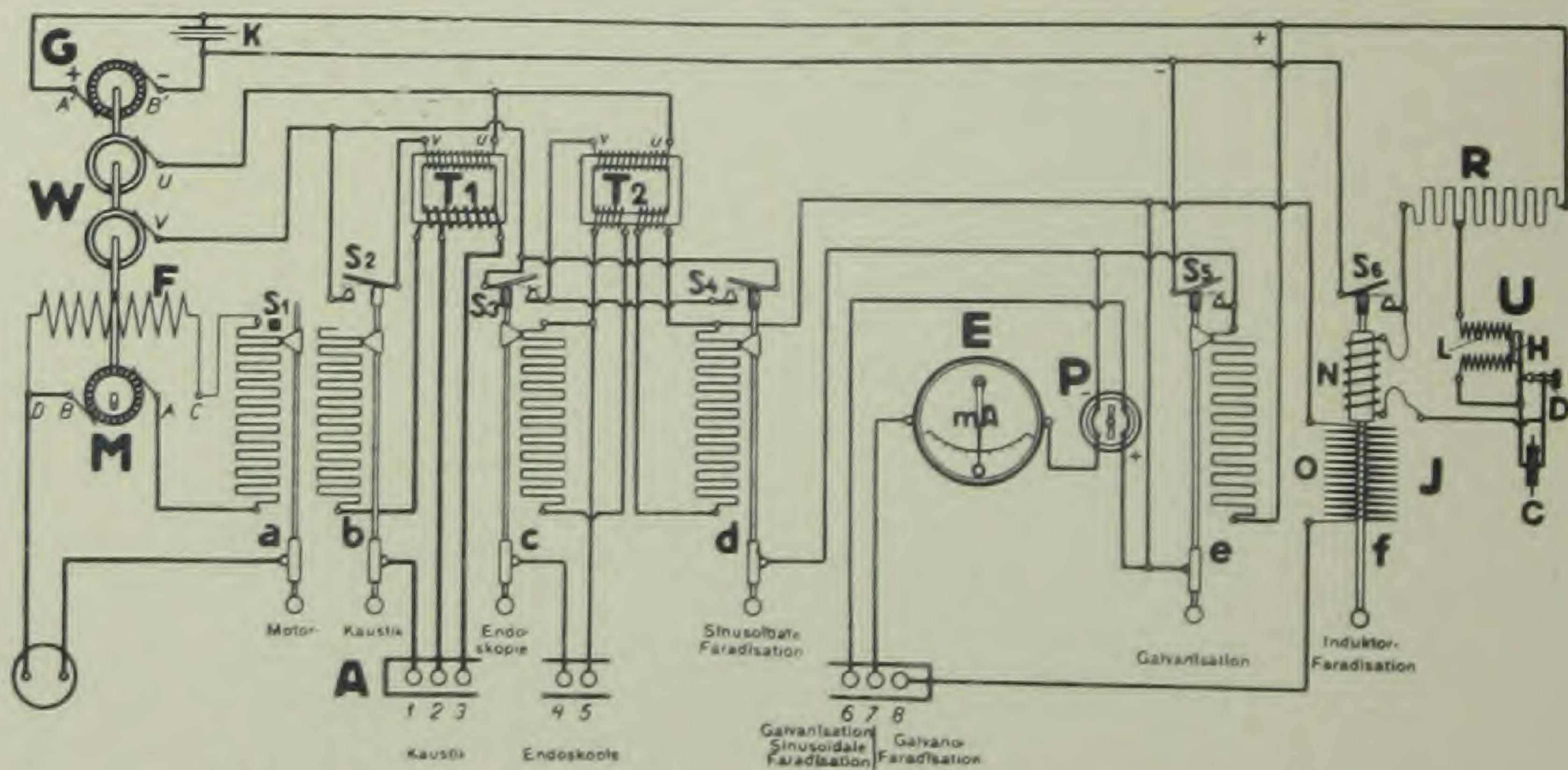
E 717 (without table)

transformers  $T_1$  and  $T_2$ . Another secondary winding on the transformer  $T_2$  supplies the alternating current for the sinusoidal faradisation. The inductor faradisation arrangement obtains its current likewise from the direct current side  $G$  of the motor generator with employment of the branch resistance  $R$ .

For use of the faradisation inductor there is required a special spark-coil with hammer-break which dust-proof is shut off by a removable glass-globe. Thus its working condition is easy to observe and when desired the interruption may be influenced by turning the contact screw. The power of the faradisation current is adjustable from zero to maximum by means of a draw-rod more or less coupling the secondary coil O of the faradisation inductor J with the primary coil N.

For the measurement of the galvanisation direct current serves a sensible moving coil milliammeter with alternative deflection and a threefold permutable range for 5, 50 or 500 M.A. The pole-changer  $P$  lateral of the milliammeter, permits a choice of the suitable current direction. All our Variostats parallel to the commutator of the generator contain the condenser  $K$  proposed by Eulenburg, preventing the appearance of an alternating current lying above in the galvanisation circuit. Besides the commutators of our machines have a sufficient high subdivision and therefore warrant constancy of the galvanisation current in every respect.

From the electro-cautery transformer may be taken off current intensities up to 25 amps., and accordingly even the largest porcelain burners can be used without objection. The terminal voltage of this transformer is further subdivided by a tapping in order to give the small burners, too, a sufficient current regulation. Therefore it is suitable to connect small burners with the terminals 1 and 2, large burners with 1 and 3.



## Induktor-Faradisation

# Switch System of the Universal Variostat (Cat. No. E 712)

The terminal voltage of the transformer provided for the use of the endoscopy apparatus, is adjustable to a large extent by means of a branch resistance c. Therefore the correct connection voltage is always at disposal for all forehead lamps, electroscopes, cystoscopes etc., employed in medical practice.

A sensible dosage or voltage regulation of the separate effective currents is brought about by the regulation resistances b—c, by whose employment past zero the respective circuits are cut in by means of special switches  $S_2$ — $S_4$ . In like manner the motor regulator first of all puts in circuit the motor generator by an ingenious combination of the switch and regulation apparatus and then permits the adjustment to the correct number of revolutions. Herewith the manipulation of our Variostat is very simple and the device of special switches made needless.

With an available alternating current connection the starting and the regulation of the motor generator is quite simply caused by the displacement of the brushes of the required repulsion motor by means of the lever, which is to be seen in the figure on page 7 to the left of the bearing bracket.

A flexible shaft designed for driving the massage apparatus, the surgical operation instruments and such like can be fastened on the lengthened shaft of the motor generator with little difficulty.

The portable stand with nickelplated metal parts and a glass basin for putting aside the electrodes which is added to our Variostat, may be omitted if desired, especially when a portable stand for instruments is at disposal. The following index gives further particulars on the two types of our Variostats.

Type	Arranged for
"Variostat" for nerve specialists	Galvanisation (electrolysis, cataphoresis), inductor faradisation, sinusoidale faradisation, electro-massage, surgical operations, and electric baths
"Universal-Variostat"	Galvanisation (electrolysis, cataphoresis), inductor faradisation, sinusoidale faradisation, endoscopy (cystoscopy), electro-cautery, electro-massage, surgical operations, and electric baths

## Accessories

1 connecting cable, 3 m long, for connection with the network.  
 1 pair of flexible cords, 1,25 m long (E 1005) for the effective currents.  
 1 electrode holder, 18 cm long (E 1114).  
 1 same with current-interrupter (E 1124).  
 2 plate electrodes, 10 or 25 qcm (E 1212 and E 1216).  
 1 disc electrode, 20 mm in diameter (E 1251).  
 1 button electrode, 5 mm in diameter (E 1272).  
 1 pair of cylinder electrodes (sponge husk) (E 1292).  
 1 pointed brush electrode, 8 mm in diameter, 35 mm long (E 1442).

Prices for the "Variostats"  
without table

Cat. No	For connection to	Application	Reich-mark
40 712	110 volts	Galvanisation (electrolysis, cataphoresis), inductor faradisation,	
40 714	220 volts	sinusoidal faradisation, endoscopy (cystoscopy), electro-cautery, electro-massage, surgical operations and electric baths	
*40 717	120 volts		
40 719	220 volts		

40 730 Portable table for the "Variostat"

40 732 Glass plate (475 x 235 mm), for the table mentioned above

40 734 Electrode tray with metal frame for attachment  
to the portable table .....Weight and Packing  
(without engagement)

Cat. No.	Object	net weight	gross weight
40 403-25	Monostat .....	2 kg	6 kg
40 430	Base for two Monostats .....	0,25 kg	1 kg
40 712-19	Variostat .....	46 kg	95 kg
40 730	Portable table .....	10 kg	15 kg
40 732	Glass plate .....	1,4 kg	2,5 kg
40 734	Electrode tray .....	1,8 kg	3,0 kg
see above	Accessories for Variostat .....	0,1 kg	0,5 kg

Section C  
**Accessories  
 for Electro-Medical Junction-Apparatus**

**1. Accessories  
 for Galvanisation and Faradisation**

**a) Flexible Cords**

with pins on both ends, braided with green and red glazed yarn

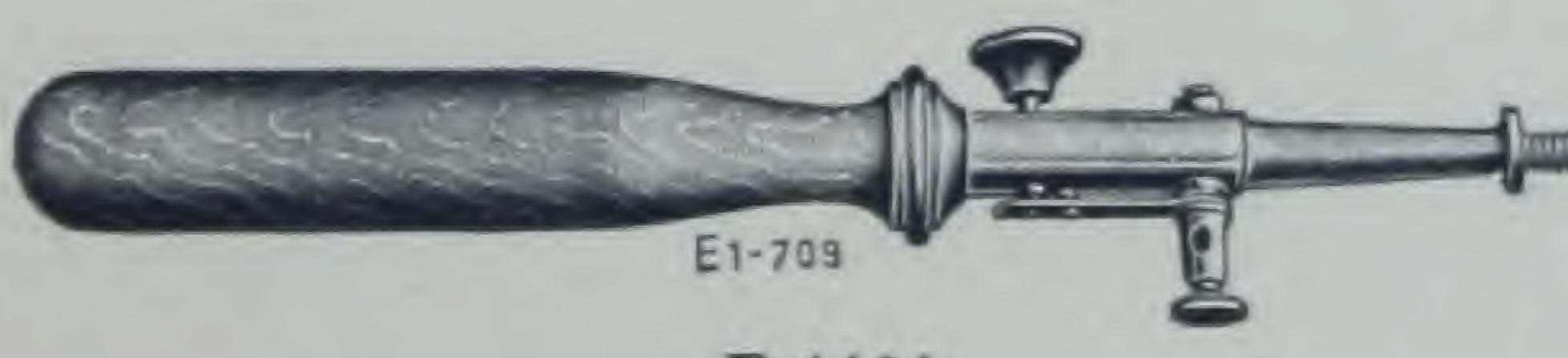
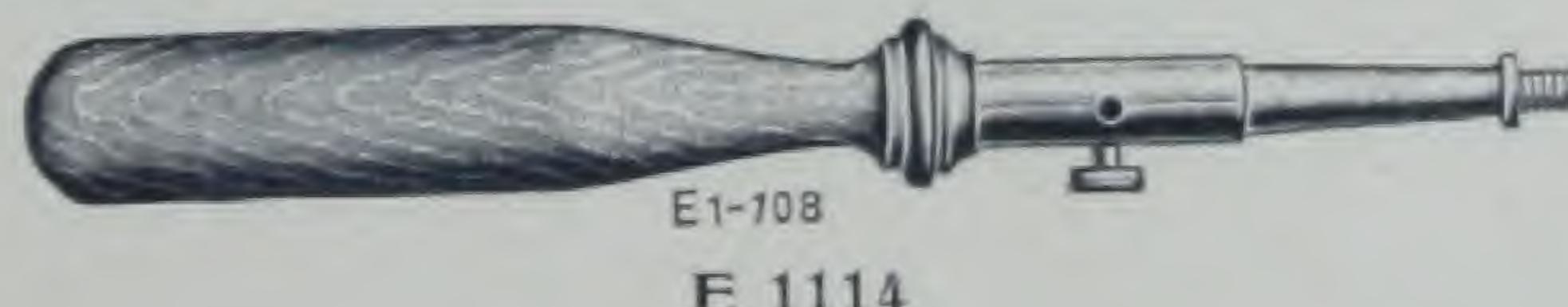
Cat. No.

<b>*E 1005</b>	1 pair of <b>flexible cords</b> , 1,25 m long . . . . .
<b>E 1007</b>	1 pair same, 2 m long . . . . .
<b>E 1009</b>	1 pair same 3 m long . . . . .

**b) Electrode Handles**

with polished wooden handles and nickleplated metal parts

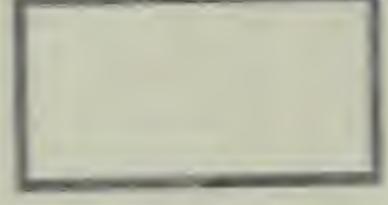
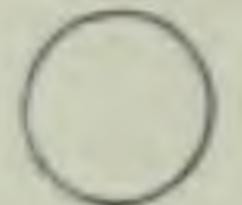
<b>*E 1110</b>	<b>Electrode Handle</b> , small type, 10 cm long .
<b>*E 1114</b>	same large type, 18 cm long .
<b>*E 1124</b>	same with current-interrupter .
<b>E 1128</b>	same with current-closer . . .
<b>E 1140</b>	<b>Angle Piece</b> forscrewing on the electrode handles



c) General Electrodes

for muscles and nerves

for screwing on the electrode handles (Cat. No. E 1110-28)

Cat. No.	Form	Measure mm	gcm	Arranged for	
<b>E 1212</b>		32×32	10	(Ordinary plate after ERB) . . .	
<b>*E 1216</b>		50×50	25	Neck, spine, throat sympathicus . . .	
<b>E 1220</b>		50×100	50	Metacarpus, finger joint, head . . .	
<b>E 1224</b>	<b>Plates</b> with stuff cover	60×120	72	Head, knee and thigh . . . . .	
<b>E 1228</b>		100×200	200	Spine	At the same time indifferent electrodes for electrolysis
<b>E 1232</b>		160×250	300	Stomach	
<b>E 1236</b>		200×300	600	Plant	
<b>E 1240</b>		300×300	900	Abdomen	
<b>E 1244</b>		250×400	1000	Foot-rest or seat	
<b>E 1251</b>		20 diameter	3	(Ordinary plate after STINZING)	
<b>*E 1252</b>	<b>Discs</b> with stuff cover	36 diameter	10	(Ordinary plate after Erb)	
<b>E 1256</b>		50 diameter	20	Neck, spine, head	
<b>E 1258</b>		70 diameter	40	Thigh, head	
<b>*E 1272</b>	<b>Buttons</b> with stuff cover	5 diameter	0,7	Ear	
<b>E 1276</b>		10 diameter	3	Various cavities	
<b>E 1280</b>		20 diameter	10		
<b>E 1284</b>		25 diameter	18		
<b>E 1292</b>	<b>Cylinder</b> (1 pair)	20 diameter 100 long	60	Hands (sponge husks)	



E 1216



E 1252



E 1272

Cat. No.

<b>*E 1420</b>	<b>Roller Electrode</b> , 50 mm wide, 35 mm in diameter, without handle, for massage . . . . .
<b>*E 1426</b>	same bipolar, 25 mm wide each, with handle, for massage . . . . .
<b>*E 1442</b>	<b>Pointed Brush Electrode</b> , round, 8 mm in diameter, 35 mm long . . . . .
<b>*E 1448</b>	same flat, 60 mm wide, without handle. . . . .
<b>E 1462</b>	<b>Brush Electrode</b> , 50 × 25 mm, with handle . . . . .
<b>*E 1468</b>	same oval, single-polar, without handle. . . . .
<b>*E 1476</b>	same rectangular, 80 × 120 mm, bipolar with handle . . . . .

#### d) Special Electrodes

##### a) *Head universal*

<b>*E 1510</b>	<b>Forehead Plate</b> with bandage . . . . .
	(compare plate electrode Cat. No. E 1224)

##### b) *Skin of the Head*

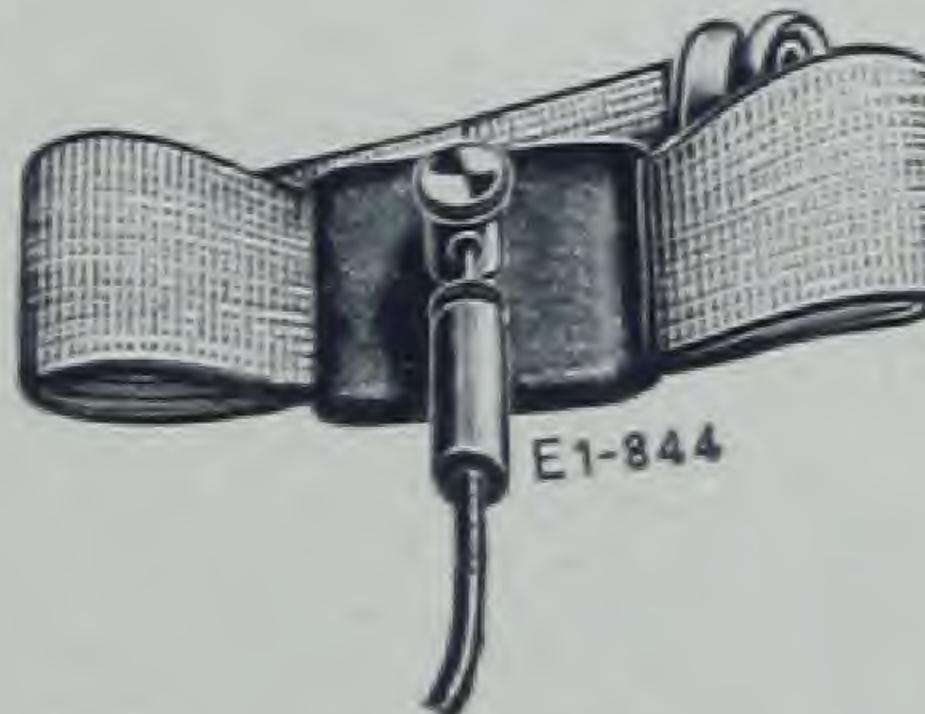
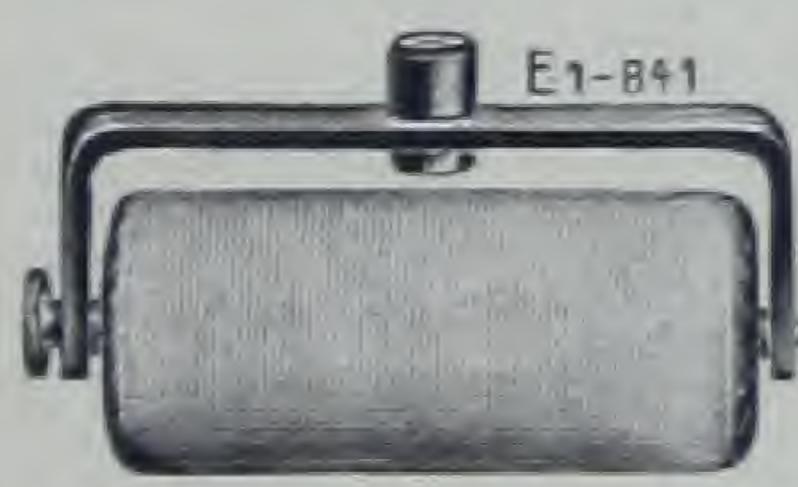
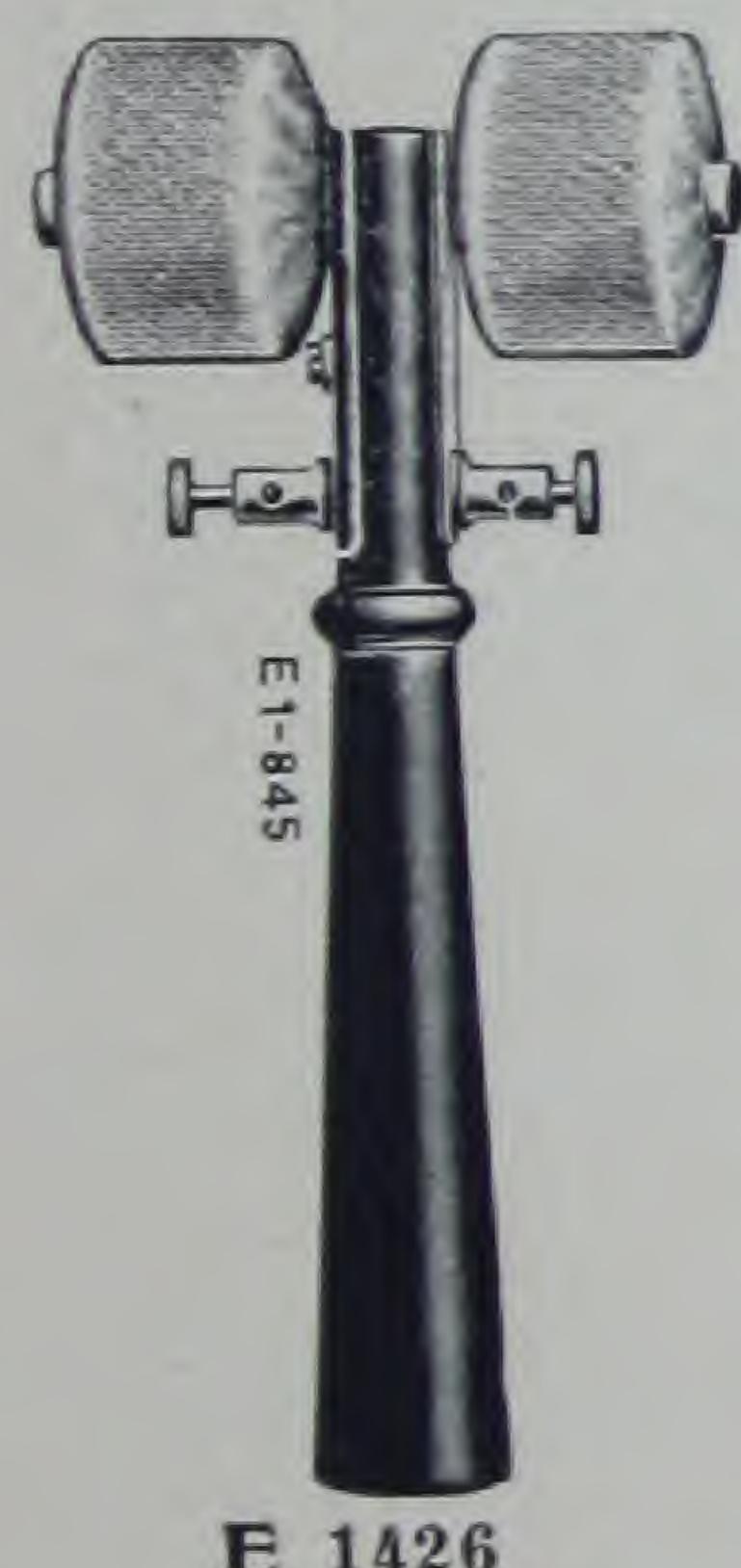
<b>E 1522</b>	<b>Comb Electrode</b> with handle. . . . .
<b>E 1524</b>	<b>Brush Electrode</b> with handle. . . . .

##### c) *Eyes*

<b>E 1532</b>	<b>Plate</b> with bandage and terminal after v. REUSS
<b>E 1534</b>	<b>Double Olive</b> for both eyes, adjustable, with handle
<b>E 1536</b>	<b>Stimulus Electrode</b> with platinum target and helve, after EULENBURG, suitable for the handle E 2110 (page 16) . . . . .

##### d) *Ears*

<b>E 1542</b>	<b>Ebonite Funnel</b> after BRENNER, with terminal
<b>E 1544</b>	<b>Wire-Loop</b> for a cotton wool pad, with flexible helve after EULENBURG, suitable for the handle E 1114



## Cat. No.

**E 1546** Double Electrode for attachment of cotton wool pads, with forked flexible cords, after URBAN-TSCHITSCH . . . . .  
(compare button electrode E 1272)

**e) Teeth**

**\*E 1550** Tooth Electrode (sterilisable) with platinum needle easily exchangeable for examination of the sensibility of the pulpa by means of the sinusoidale faradisation current . . . . .

**f) Nasopharynx**

**E 1552** Wire-Loop for a cotton wool pad, with flexible helve, after EULENBURG, suitable for the handle E 1114 . . . . .

**g) Throat, Neck and Spine**

**E 1564** Curved Metal Plate after EULENBURG, with handle and clamp . . . . .  
(compare plate electrode E 1216)

**h) Larynx**

**\*E 1572** Olive, on flexible helve bougie covered, suitable for the handle E 1552 . . . . .

**E 1574** Wire-Loop after EULENBURG, type as Cat. No. E 1552 . . . . .

**i) Esophagus**

**E 1582** Soft Rubber Tube with line spiral and ebonite button for fastening a cotton wool pad, after ROSENHEIM . . . . .

**E 1584** Olive an flexible helve bougie covered, suitable for the handle E 1114 . . . . .

**k) Stomach**

**\*E 1592** Rinsing-Probe of soft rubber with metal olive, cock, and clamp, after EWALD . . . . .

**E 1594** Ebonite Capsule with electrode and clamp for swallowing, after EINHORN . . . . .

**l) Rectum**

**\*E 1602** Metal Rod with handle and clamp after ULTZ-MANN . . . . .

**\*E 1604** Metal Button (11 mm in diameter) on flexible helve bougie covered, suitable for the handle E 1114 . . . . .

**\*E 1606** Rinsing-Probe of soft rubber (short type) with metal olive, cock, and clamp, after EWALD . . . . .

**m) Perinaeum**

**E 1622** Curved Metal Plate with helve and clamp, after STEMBO . . . . .

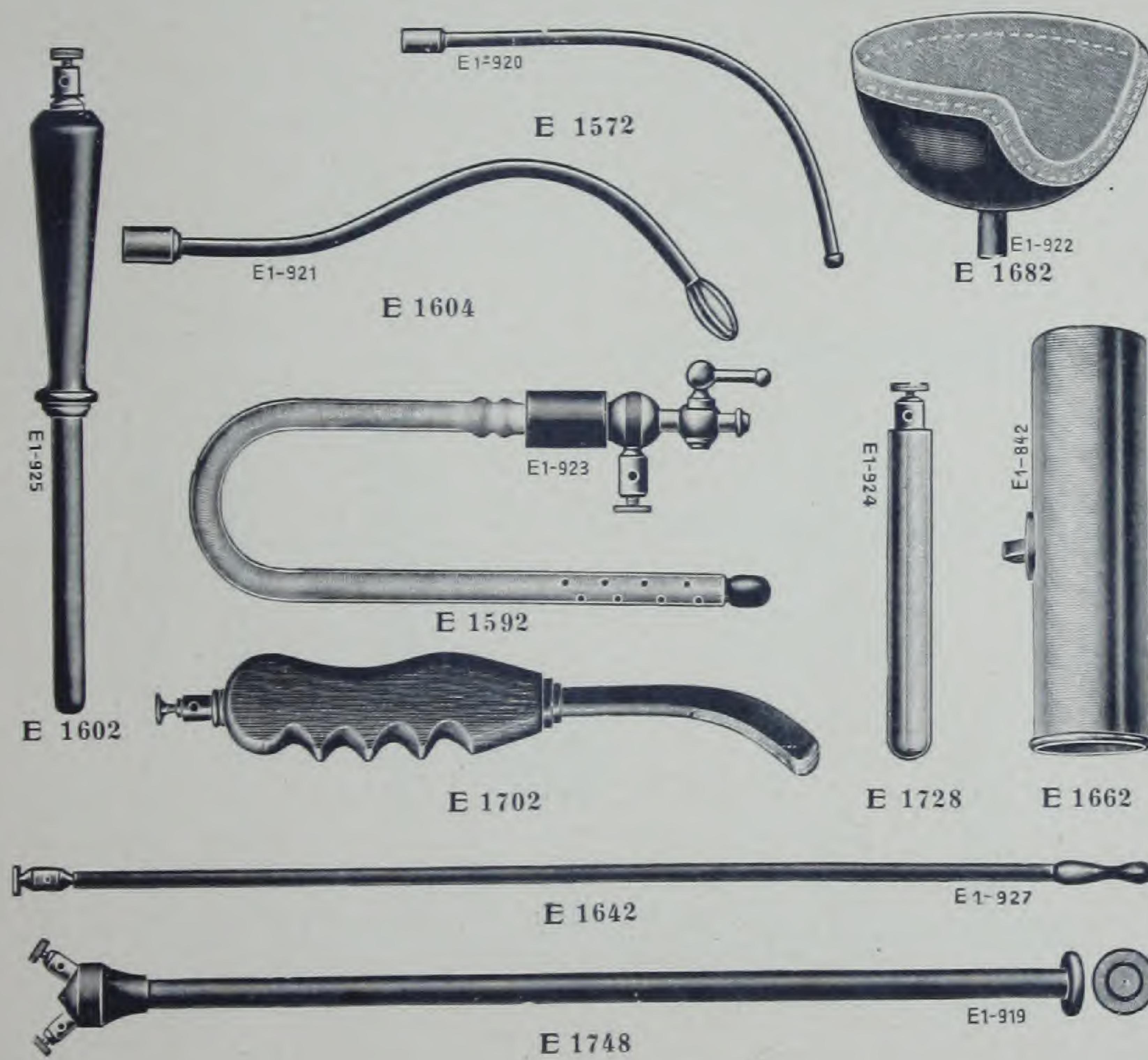
**n) Bladder and Urethra**

**\*E 1642** Olive on flexible probe bougie covered, with clamp, long and thin type for men . . . . .  
same, short and stronger type for women . . . . .

**E 1644**

Cat. No.

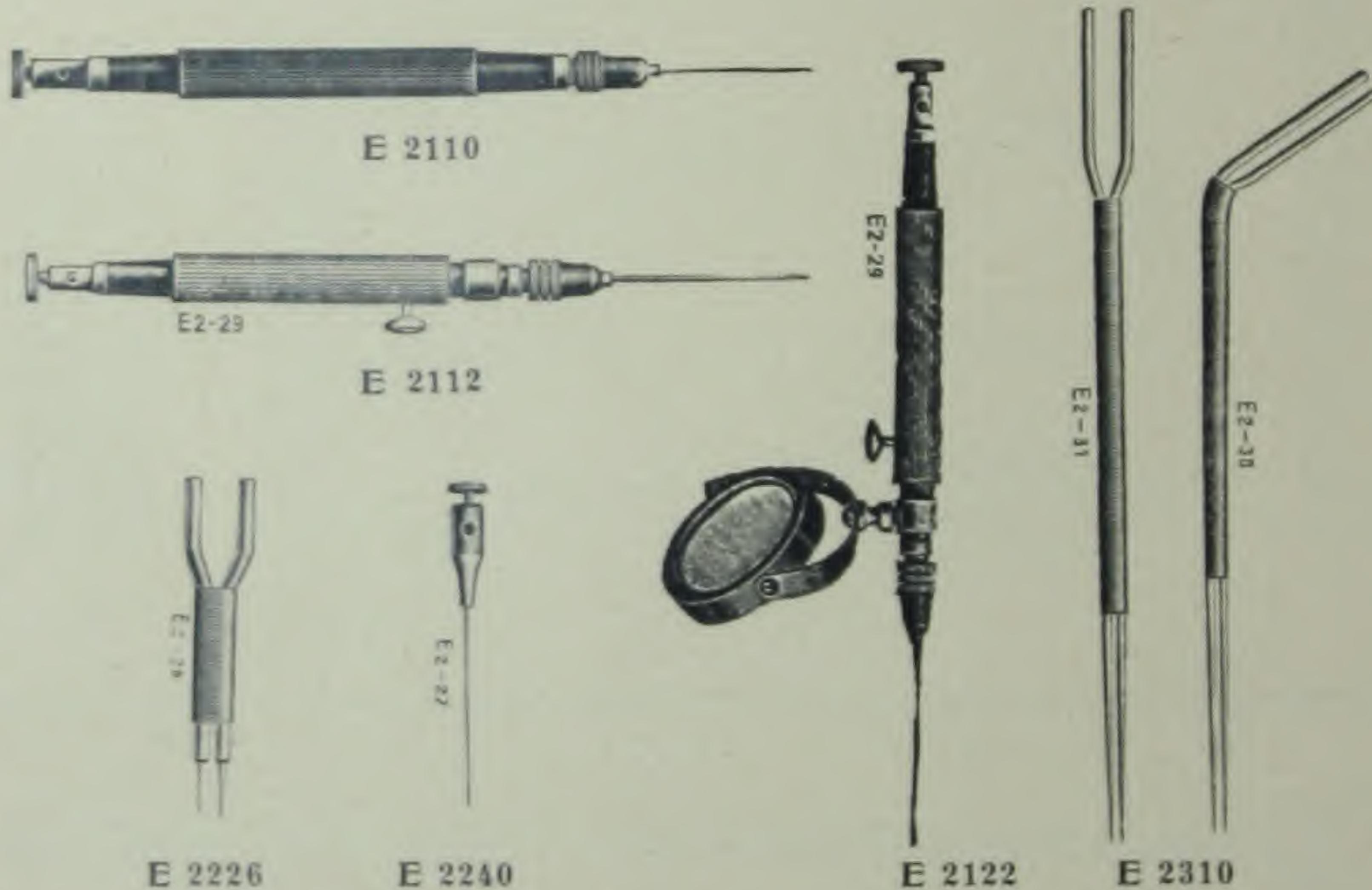
*o) Penis*  
**\*E 1662** Metal Tube polished inside with clamp . . . . .  
*p) Scrotum*  
**\*E 1682** Metal Cup after ZÜLZER, suitable for the handle  
**E 1683** E 1114, large type for men . . . . .  
**E 1683** same, small type for boys . . . . .  
*q) Prostata*  
**\*E 1702** Metal Pin, angularly curved with handle, after  
 SCHARFF . . . . .  
*r) Vagina*  
**E 1722** Metal Ball on flexible helve bougie covered,  
 with clamp . . . . .  
**\*E 1728** Metal Cylinder with clamp . . . . .  
*s) Uterus*  
**E 1742** Olive (4 mm in diameter) on flexible probe  
 bougie covered (25 cm long), with clamp . . .  
**\*E 1748** same, bipolar, after APOSTOLI, with 2 clamps



## 2. Accessories for Electrolysis and Cataphoresis

Cat. No.

<b>*E 2110</b>	Puncture-Needle Holder, ribbed for common needles . . . . .				
<b>*E 2112</b>	same, with current interrupter . . . . .				
<b>E 2114</b>	same, with current closer . . . . .				
<b>E 2120</b>	same, with magnifying glass, after SCHWANN . . . . .				
<b>*E 2122</b>	same, with current interrupter . . . . .				
<b>E 2124</b>	same, with current closer . . . . .				
<b>E 2136</b>	<b>Double Puncture-Needle Holder</b> with current interrupter . . . . .				
<b>E 2210</b>	<b>Short Puncture-Needle</b> . . . . .				
	of steel	<b>a</b> 0,3	<b>b</b> 0,5	<b>c</b> 0,8	<b>d</b> 1,0 mm in thickness
<b>E 2216</b>		<b>a</b> 0,3	<b>b</b> 0,5	<b>c</b> 0,8	<b>d</b> 1,0 mm in thickness
		weight 45 130 360 500 mg			
<b>E 2222</b>	<b>Short Puncture-Needle with Screw Connection</b> for screwing on handle E 1110 (page 11)				
	of steel	<b>a</b> 0,3	<b>b</b> 0,5	<b>c</b> 0,8 mm in thickness	



Cat. No.

\*E 2226 **Short Puncture-Needle with Clamp** for direct connection to the flexible cords . . . . .

of steel a b c  
0,3 0,5 0,8 mm in thickness

\*E 2240 **Double Puncture-Needle of Steel**, suitable for the holder E 2136, short type, 6 cm long . . . . .

\*E 2310 **same, long type, with curve as on the cautery burners on page 20.** . . . . .

Curve A	B	C	D	E	F
for nose mouth	larynx	pharynx	naso- pharynx	ear	skin

E 2610 **Subcutaneous Needles** after KROMAYER, with 5 gilt fine needles, clamps, and glass box for preservation . . . . .

\*E 2620 **Multiple-Puncture Needles** after LASSAR with 10 steel needles on round plate and clamp . . . . .

\*E 2740 **Urethra Stricture Electrode** with 8 attachments of 15—22 Charrière . . . . .

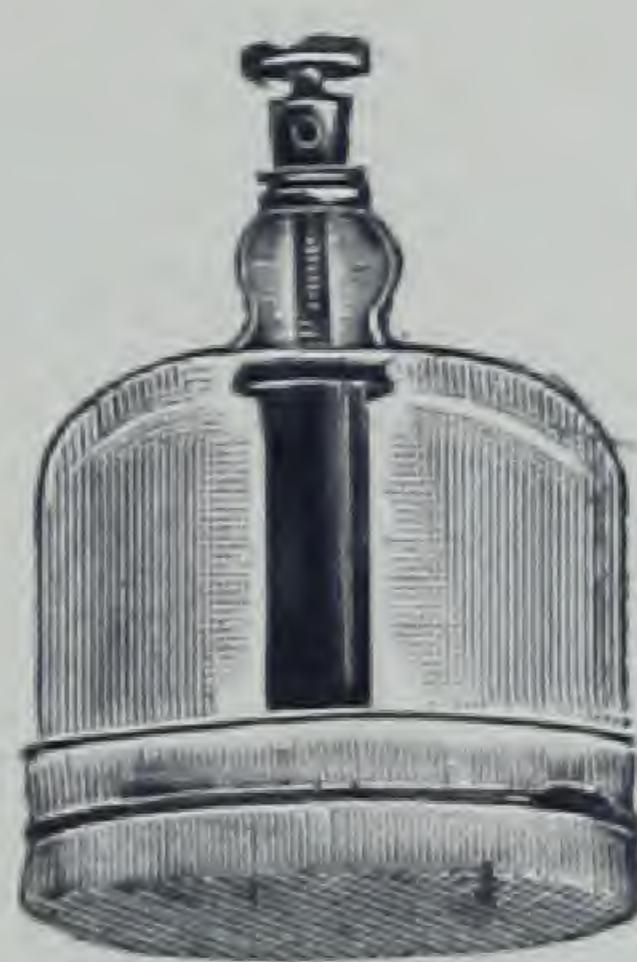
E 2760 **Uterus Carbon Probe Electrodes** after APOSTOLI, with 8 different carbon attachments, 5—12 mm in diameter . . . . .

\*E 2820 **Cataphoresis Electrode** consisting of a glass reservoir with porous cap of clay and carbon electrode. . . . .

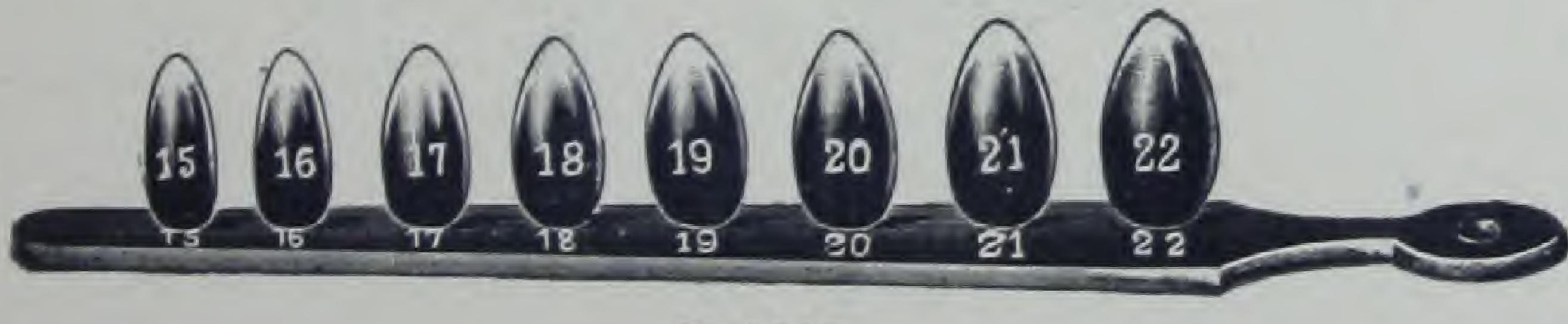
As regards **Indifferent Electrodes** compare page 12 general electrodes (Cat. No. E 1228—36)



E 2620



E 2820



E 2740

### 3. Accessories for Electro-Cautery

#### a) Connecting Cable

Cat. No.

**E 3010** Cabel, 2 x 6 qmm, suitable for all burners and loops, 1,5 m long . . . . .  
**E 3012** same, 2 m long . . . . .

#### b) Handles for Electro-Cautery Burners

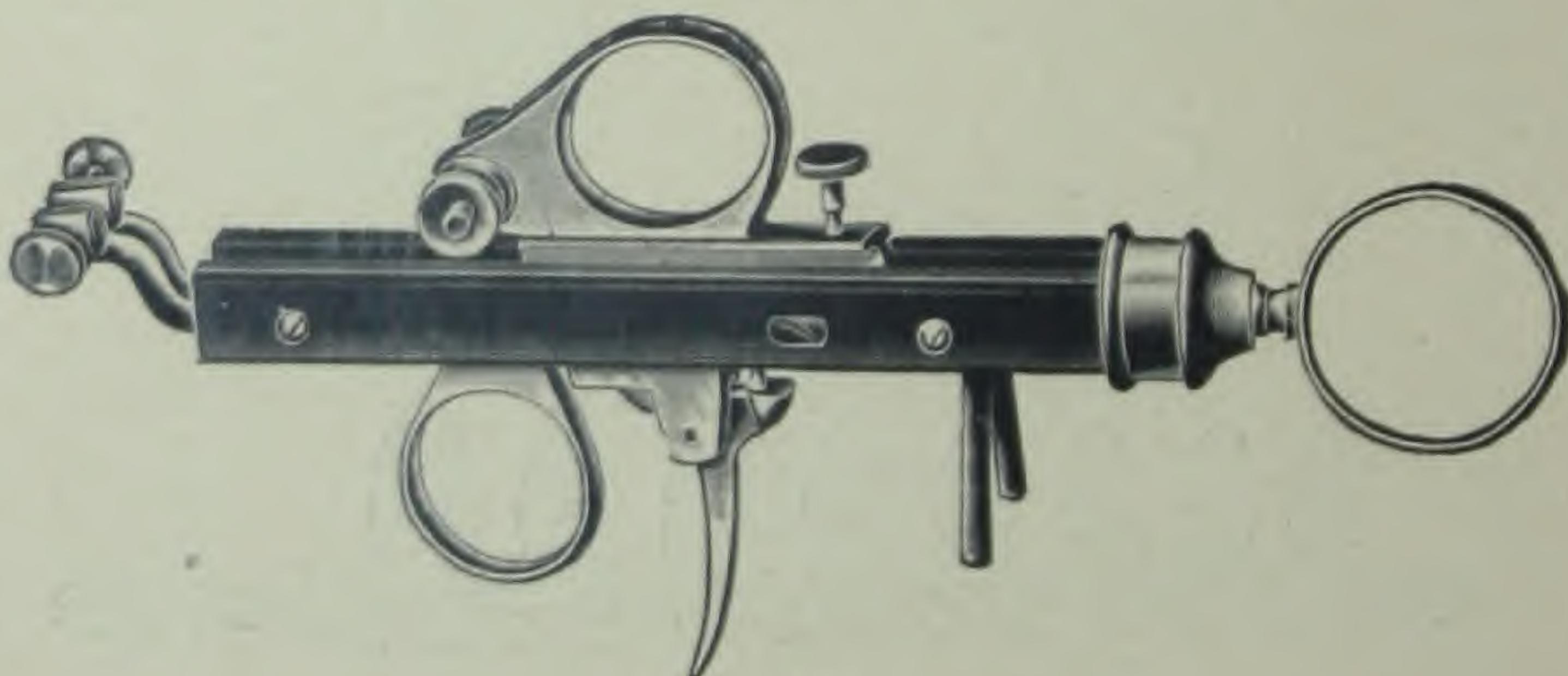
\***E 3122** Simple Cautery Handle after SCHECH, with current interrupter, black wooden handle and nickleplated metal parts . . . . .  
\***E 3128** same after SATTLER-NIEDEN with sliding contact . . . . .  
\***E 3162** Universal Handle for Burners and Loops after SCHECH, loop-guide to be shifted by the forefinger . . . . .  
**E 3168** Universal Handle for Burners and Loops after KUTTNER, both guide rings to be shifted by the guide . . . . .



E 3122



E 3128 with E 3204



E 3162

## c) Eyes and Tooth Burners without Curve, 3—6 cm long

Cat. No.

<b>*E 3202</b>	<b>Burners</b> in form of a point . . . . .	}
<b>*E 3204</b>	same, in form of a point curved to the right . . . . .	
<b>E 3206</b>	same, in form of a point curved to the left . . . . .	
<b>*E 3214</b>	same, in form of a pointed plough . . . . .	
<b>*E 3224</b>	same, in form of a round lancet . . . . .	
<b>*E 3234</b>	same in form of a bow with edge . . . . .	
<b>*E 3242</b>	same in form of a lancet curved to the right . . . . .	

<b>E 3244</b>	same in form of a lancet curved to the left . . . . .	}
<b>*E 3246</b>	same in form of a pointed lancet . . . . .	

All shapes of burners not quoted in this list are supplied on demand (compare burners with curve on page 20)

## d) Loop Tubes (Ligature Tubes) with Accessories

<b>E 3318</b>	<b>Loop Tube</b> , 8 cm long	can be delivered
<b>E 3322</b>	same 12 cm long	with the same curve
<b>E 3325</b>	same 15 cm long	as the burners No.
<b>E 3328</b>	same 18 cm long	E 3402—3558, com-
<b>E 3330</b>	same 20 cm long	pare the figures on

page 20

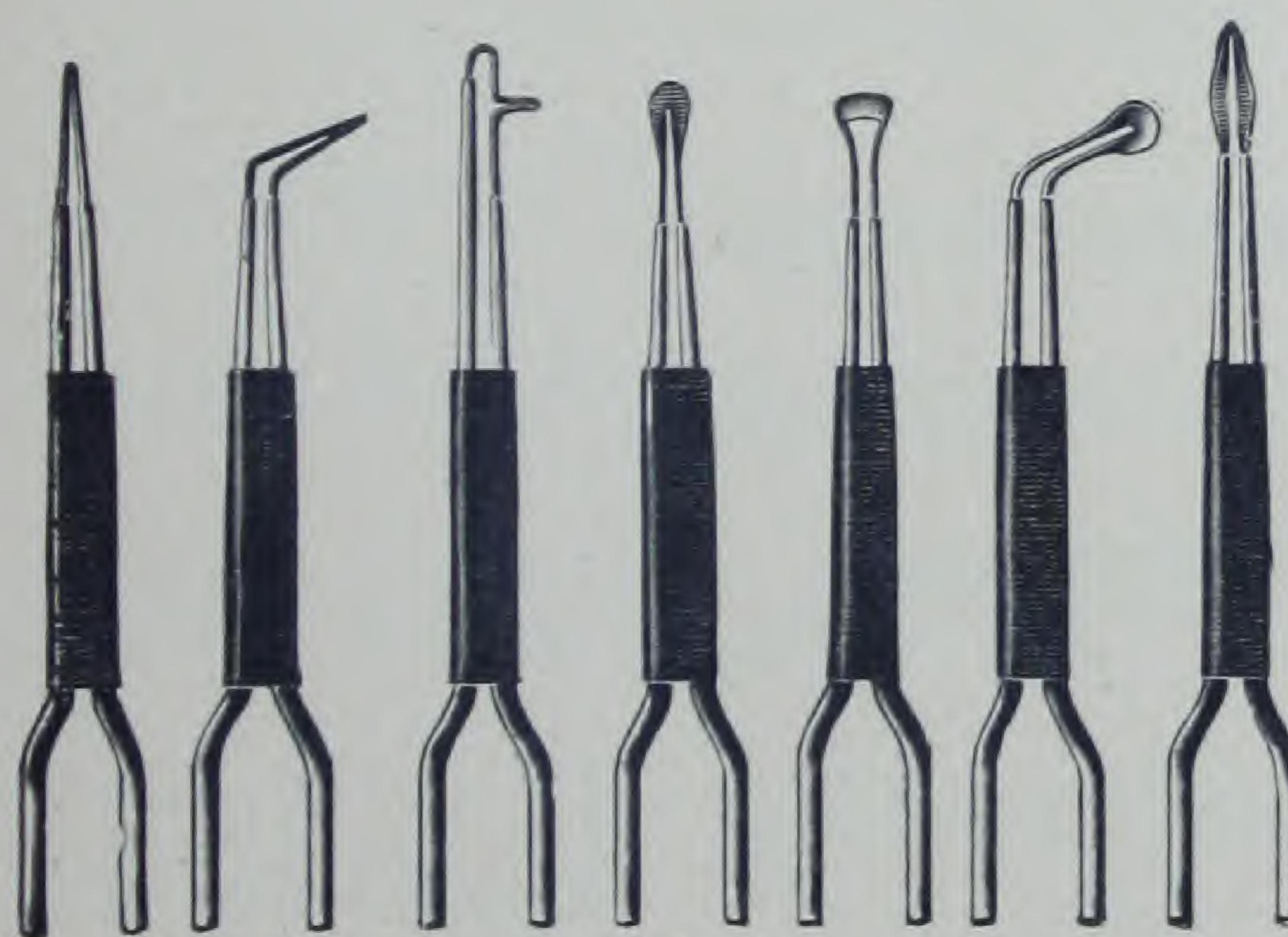
<b>E 3352</b>	<b>Loop Wire of Steel</b> . . . . .
	in rolls a b c d e

0,3	0,35	0,4	0,45	0,5	mm in thickness
-----	------	-----	------	-----	-----------------

<b>E 3363</b>	<b>Loop Wire of Platinum</b> . . . . .
	a b c d e

0,2	0,25	0,3	0,35	0,4	mm in thickness
-----	------	-----	------	-----	-----------------

weight per m 0,70 1,10 1,53 2,10 2,73 gramme



E 3202—46

e) Electro-Cautery Burners with Curve  
sterilisable type

	Arranged for	Current con- sumption amps.
<b>A</b>	Nose	15
<b>B</b>	Larynx	15
<b>C</b>	Pharynx	15
<b>D</b>	Nasopharynx	15
<b>E</b>	Ear	8
<b>F</b>	Mouth and skin	15
<b>G</b>	Urethra, uterus etc.	8

*When ordering please state  
if the legs are to be **crossed**  
or **parallel***

Cat. No.

**E 3402**

Point . . . . .

**E 3406**Point curved to the  
right . . . . .**E 3410**

Point curved to the left

**E 3414**

Ball . . . . .

**E 3418**Lancet straight { pointed . . .  
round 3 mm**E 3422**

round 4 mm

**E 3426****E 3430**Lancet { to the right  
curved { to the left.**E 3434**Plough, pointed, curved  
to the right . . . . .  
same, wide, curved to  
the right . . . . .**E 3438****E 3442**

Cat. No.

**E 3444**



Plough, pointed, curved  
to the left . . . . .  
same, wide, curved to  
the left . . . . .

**E 3450**



**E 3454**



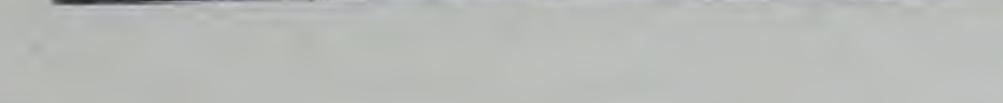
**E 3458**



**E 3462**



**E 3466**



Knife, small { right .  
left .  
right .  
left .

**E 3470**



**E 3474**



Knife, large { right .  
left .

**E 3478**



Bow with edge . . .

**E 3482**

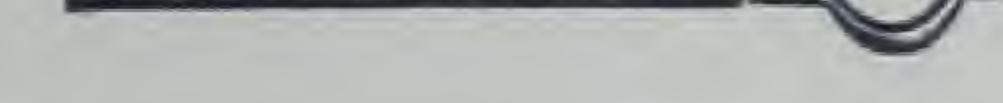


Cupola, front . . .

**E 3486**



**E 3490**



Cupola, lateral { right .  
left .

**E 3494**



**E 3498**



**E 3502**



Loop, small . . . . .  
same, large . . . . .  
same after VULPIUS .

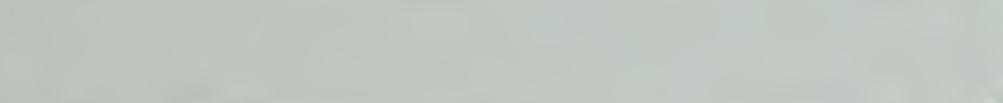
**E 3506**



**E 3510**



**E 3514**



Snail { small . . . . .  
medium . . . . .  
large . . . . .

**E 3518**



Snail for the skin . .

**E 3522**



**E 3526**



**E 3530**



Spiral, wide { small .  
medium .  
large .

**E 3534**



Spiral, pointed . . .

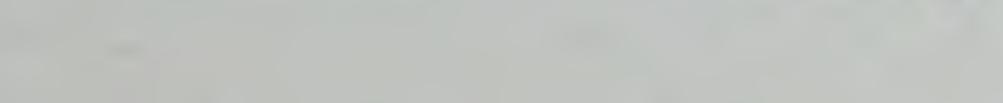
**E 3538**



**E 3542**

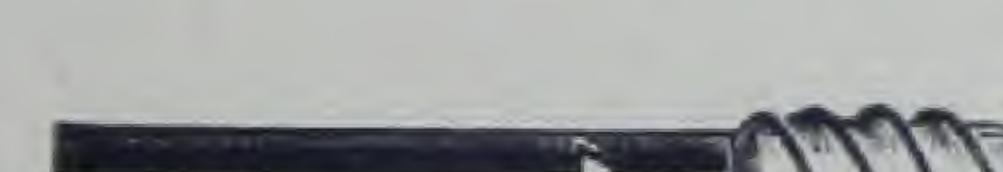


**E 3546**



Puncture burners { twofold .  
threefold .  
fourfold .

**E 3550**



**E 3554**



**E 3558**



Porcelain burners { small . . .  
medium . . .  
large . . .

#### 4. Accessories for Endoscopy

Cat. No.

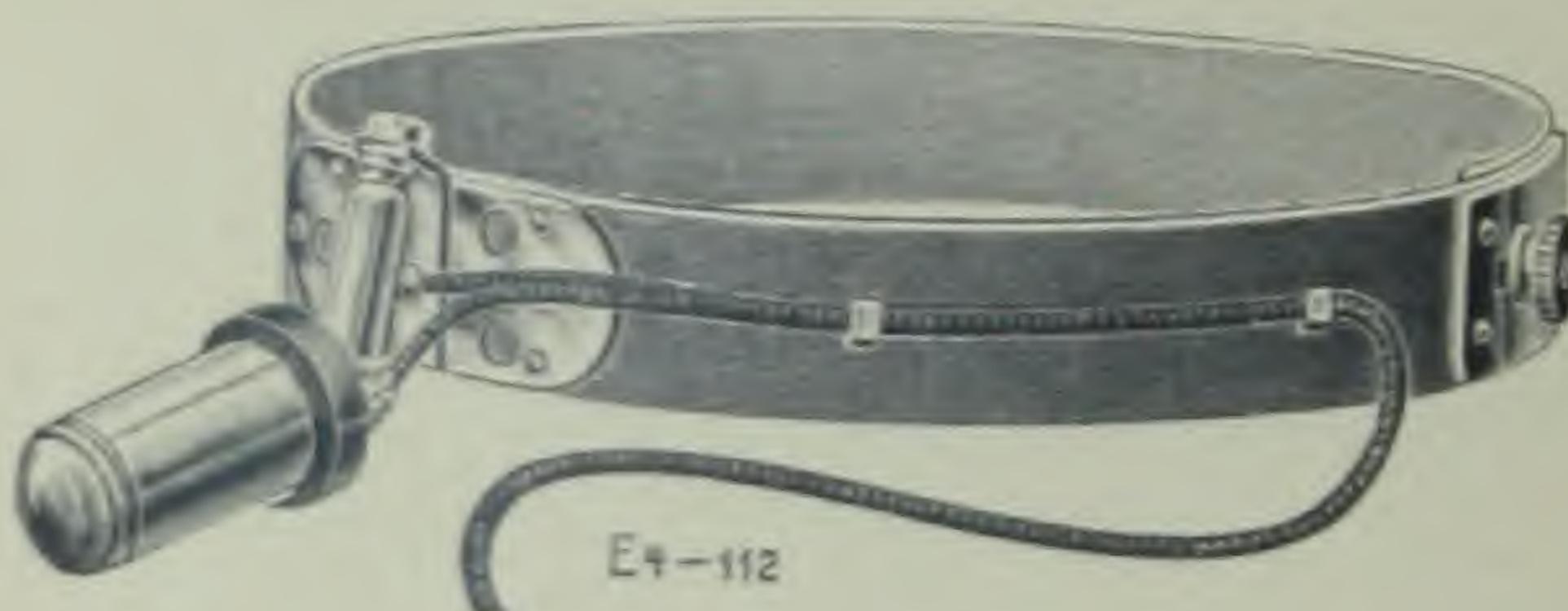
##### *a) Forehead Lamps*

**\*E 4210** Forehead Lamp after HERYNG, with forehead bandage and incandescent lamp, mounted in a ball and socket adjustable in all directions, inclusive convex lens and flexible cords . . .

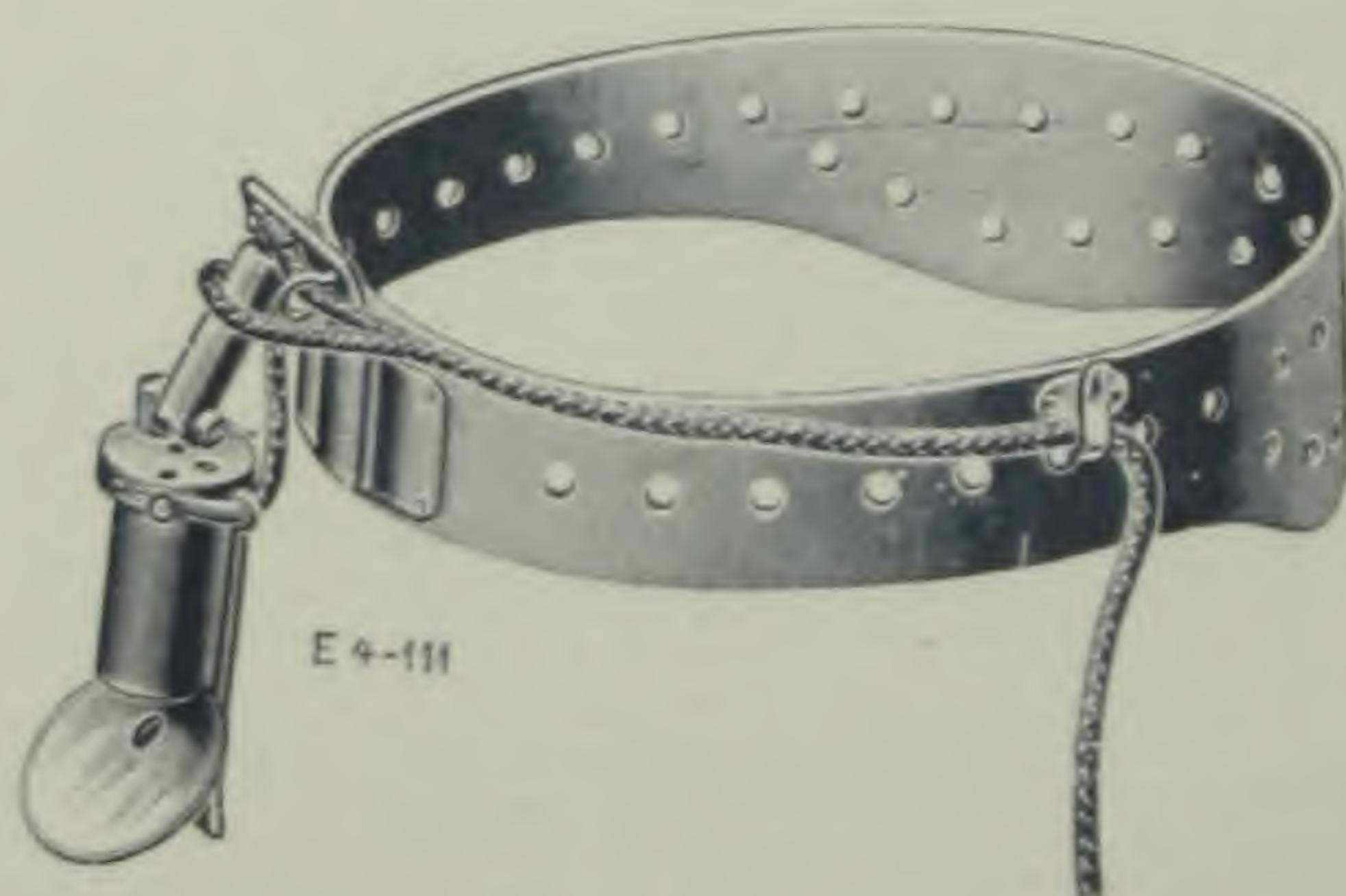
**\*E 4220** Forehead Lamp after KIRSTEIN-KILLIAN, with a mirror of glass, fastened to a forehead bandage, adjustable in all directions by means of a joint, inclusive flexible cords . . . . .

##### *b) General Examination of Cavities*

**\*E 4304** Universal-Electroscope after BRÜNING, consisting of an apparatus for lighting purposes with a metal cross filament lamp (4 volts) and a handle, without examination tube (compare the different sections), but with spare lamp and cable . .



E 4210



E 4220



E 4304

Cat. No.

*c) Orbit*

\*E 4330 **Hand Lamp**, stretched form with adjustable convex lens for magnifying or diminishing the cone of light, inclusive cable . . . . .

*d) Ears*

E 4356 **Otoscope after HAIKE**, in wooden box with adjustable optic attachment, India rubber ball, 3 different ear-funnels and cable . . . . .

*e) Nose*

E 4406 **Nose Endoscope (Salpingoscope or Antro-scope) after VALENTINE and HIRSCHMANN**, with optic system after Ringleb, modification Zeiß-Kollmorgen — gauge No. 12 Charrière's scale (4 mm), 120 mm long, with contact tag, cable, spare lamp and wooden box. . . . .

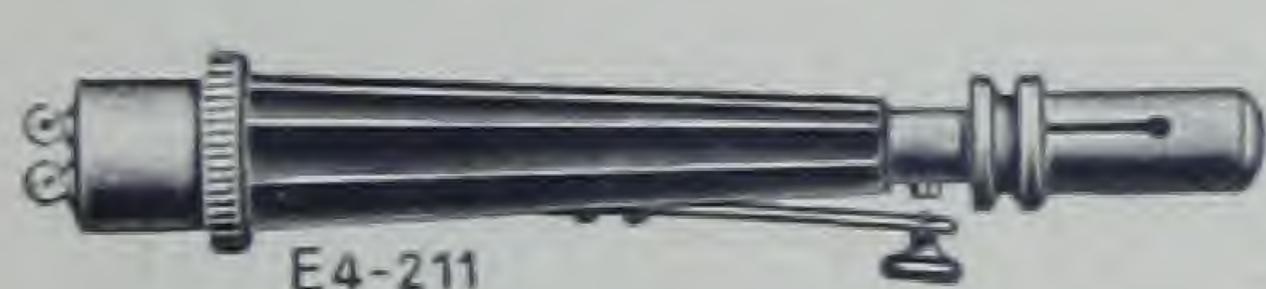
E 4408 **Nose Endoscope**, same as above, with optic system after Kollmorgen (erect and laterally unreversed image) . . . . .

E 4414 **Mirror for the Nose after GERBER** (anastigmatic) with case and cable (figure as E 4496) .

E 4416 **Nose Speculum after VOLTOLINI**, suitable for the otoscope after Hake (Cat. No. E 4356), to replace the ear funnel . . . . .

*f) Maxillary Cavity and Nasopharynx*

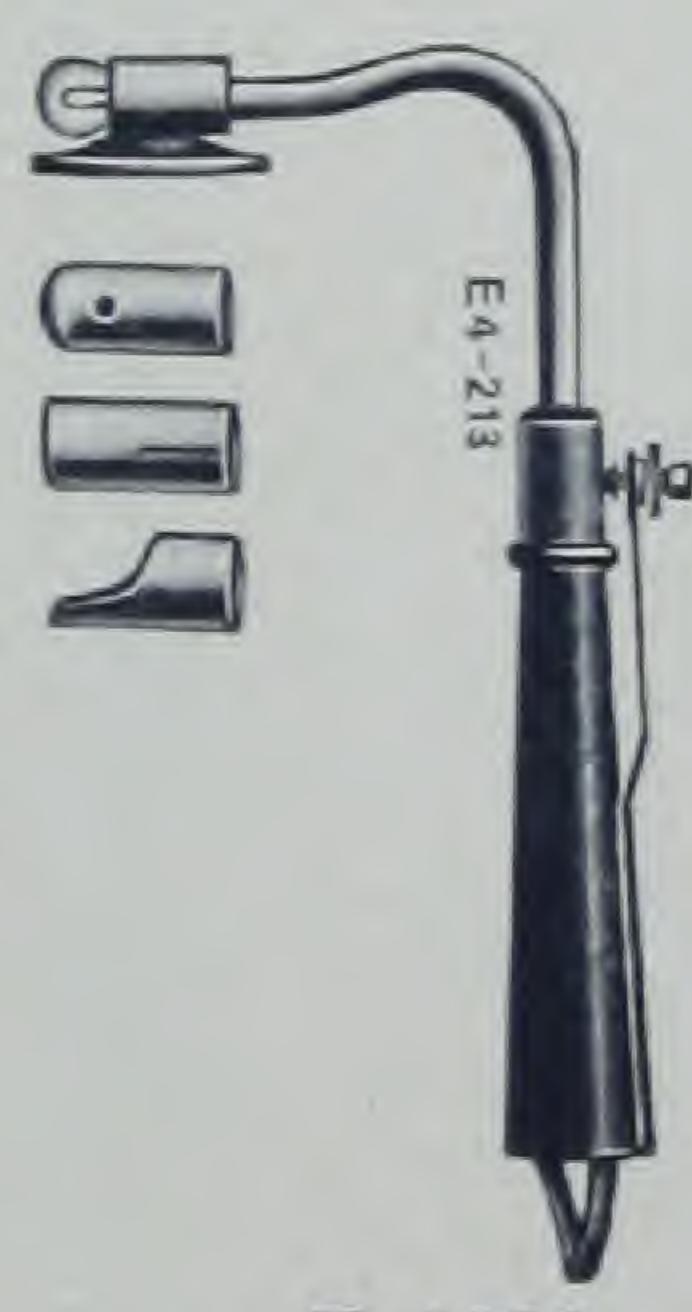
\*E 4420 **Hand Lamp after HERYNG**, angular form, with two different dark-husks and a rubber husk, inclusive cable . . . . .



E 4330



E 4430



E 4420

Cat. No.

*g) Oral Cavity and Teeth*

- \*E 4430 Hand Lamp with curved glass rod after HERYNG, with cable . . . . .
- \*E 4440 Glass Spatula, 185 mm long, with cable . . . . .
- \*E 4446 Mirror for the Mouth with handle lamp and round mirror (not magnifying), figure as E 4498

*h) Trachea, Bronchies, Larynx and Esophagus*

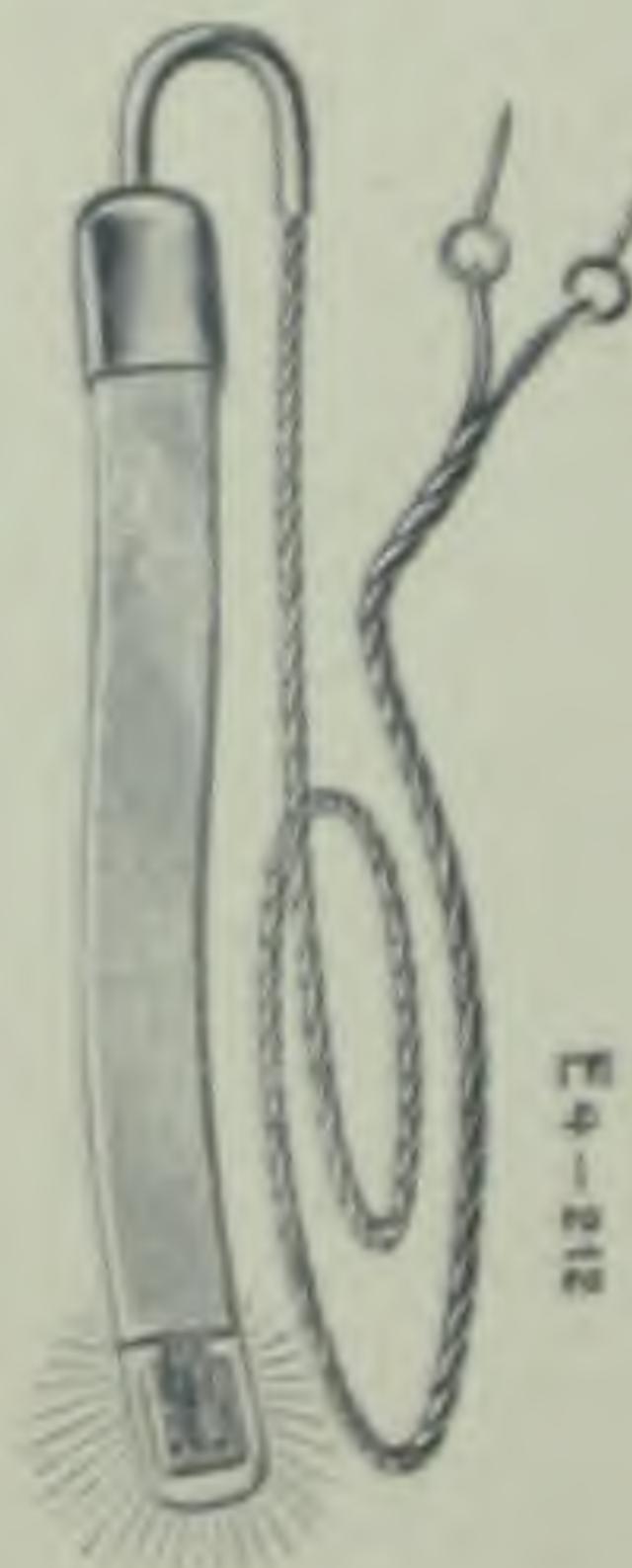
E 4450 Laryngoscopic, Tracheoscopic, and Bronchoscopic Accessories for the Universal Electro-  
scope after BRÜNING, consisting of:

4 tube spatulas with removable tubes, 1 foreign body forceps, to lengthen (with 5 different attachments), 2 little hooks for foreign bodies, 12 simple cotton wool carriers, 1 autoscopic spatula for children, 2 different autoscopic spatulas for adults inclusive case . . . . .

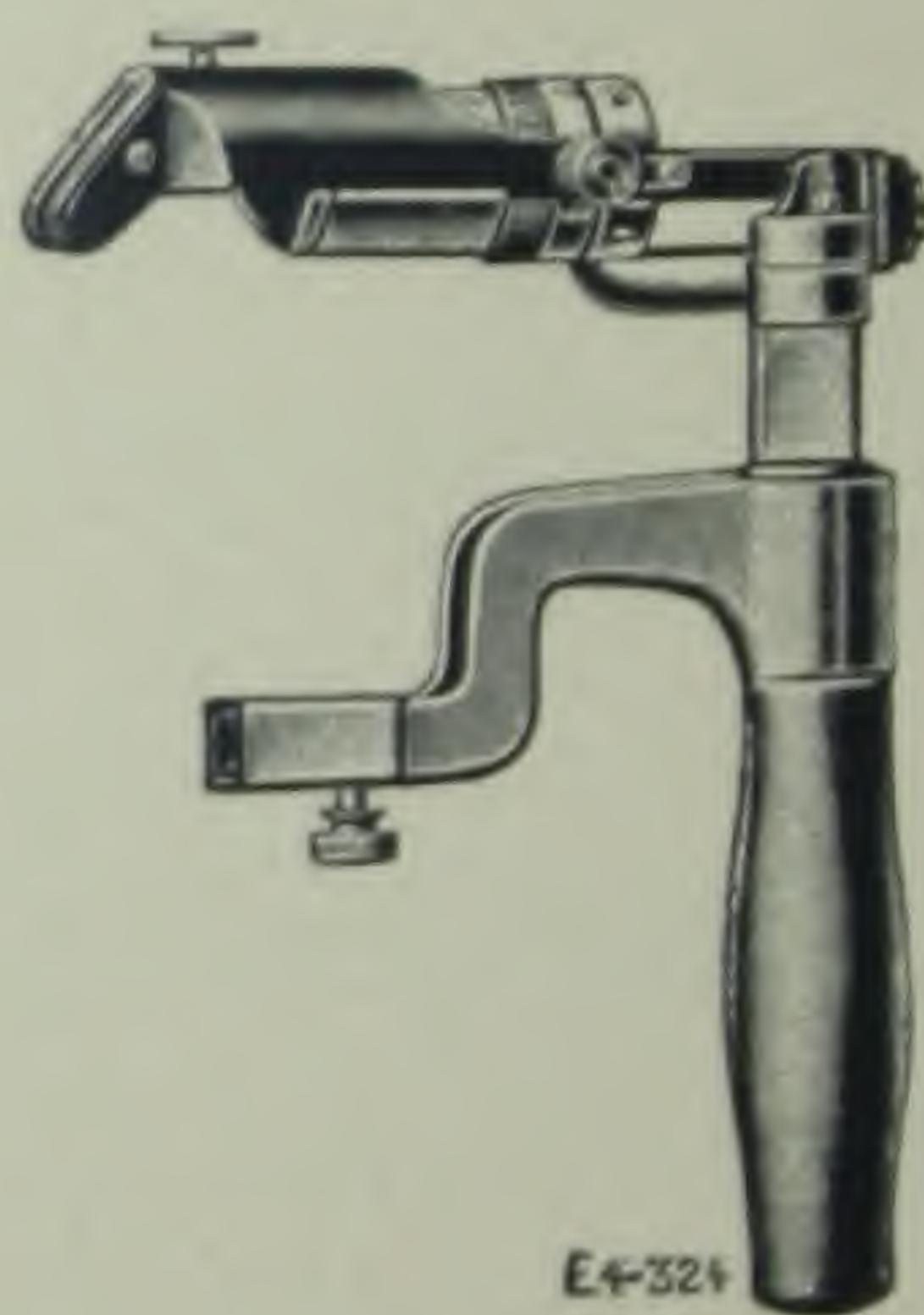
E 4452 Esophagoscopic Accessories for the Universal Electro-  
scope after BRÜNING, consisting of:

3 tube spatulas with removable tubes, 3 special bougies (as mandrel), 1 foreign body forceps, to lengthen (with 2 different attachments), 1 secretion absorber (with 3 attachments), 12 cotton wool carriers, 1 pointed brush syringe . . . . .

\*E 4460 Special Electro-  
scope for Laryngologists after  
BRÜNING, consisting of a movable apparatus  
for lighting purposes with a metal cross filament  
incandescent lamp (4 volts) and an adjustable  
handle, inclusive spare lamp and cable . . . . .



E 4440



E 4460

Cat. No.

**E 4462** Broncho-Esophagoscopic Accessories for the special electroscope after BRÜNING, consisting of:

5 double tubes (5, 7, 8.5, 10, and 12 mm in diameter), 1 putting-in tube (10 mm in diameter), 3 special bougies (for the mandrel), 1 foreign body forceps, to lengthen, with 5 different attachments, 1 same with 2 different attachments, 1 secretion absorber with 3 attachments, 2 little hooks for foreign bodies, 12 cotton wool carriers, 1 autoscopic spatula for children, 1 autoscopic spatula for adults, inclusive case. . . . .

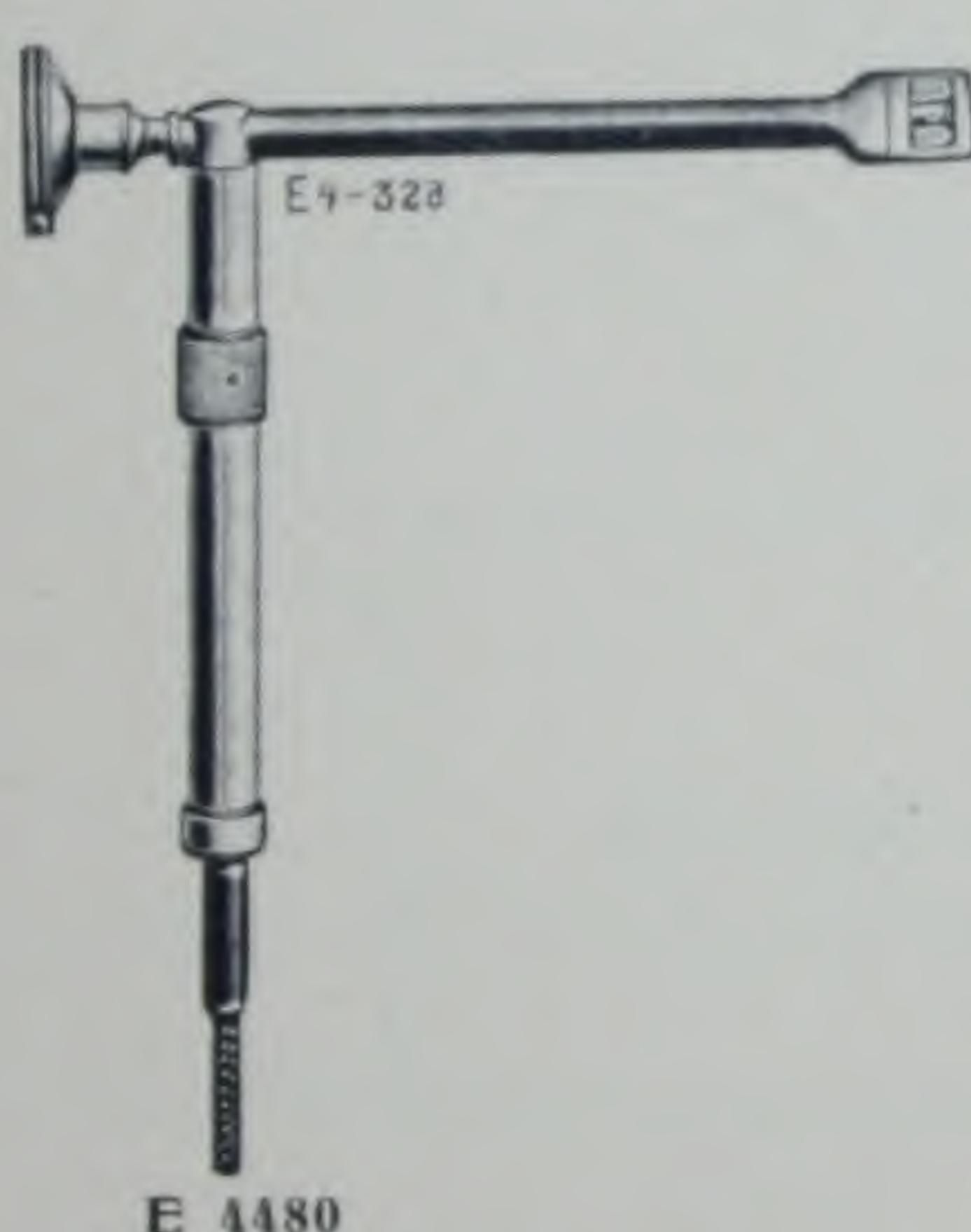
*Further auxiliary instruments for the electroscopes after Brünings on demand!*

\***E 4480** Laryngoscope after HAYS-FLATAU of special light intensity (also for the examination of the nasopharynx with closed mouth), large type for adults, with case and cable. . . . .

**E 4482** Laryngoscope after HAYS-FLATAU, same as above, small type for children . . . . .

**E 4484** Protective Disc after COMBE for the above given laryngoscope to protect the physician from infection . . . . .

\***E 4498** Laryngeal Spectrum after WOLF-BRÜNING, anastigmatically magnifying, with case and cable



*m) Bladder*

### Fore-Notices:

All cystoscopes are delivered in wooden cases, with contact tag, cable, and spare lamp. When ordering please state the gauge number desired.

*There corresponds gauge No.:*

<i>12*)</i>	<i>15</i>	<i>18</i>	<i>21</i>	<i>23</i>	<i>Charrière</i>
<i>= 4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>7,6 mm in diameter</i>	

\*) only for examining children.

The different gauge numbers do not cause a difference in price.

Further, the cystoscopes are supplied with 4 different optical components, namely:

*Optical components after Kollmorgen with erect  
and unreversed image . . . . .*

## Optical components after Nitze . . . . .

*Optical components after Ringleb by Carl Zeiß,  
Jena . . . . .*

*Optical components after Ringleb in modification  
Zeiss-Kollmorgen . . . . .*

K  
N  
RZ  
RZK

Cat. No. Optics

# Orientation Cystoscope after NITZE

available in gauge Nos.

\*E 4630 12 15 18 21 Charr. K

E 4632 length 155 255 265 240 mm N

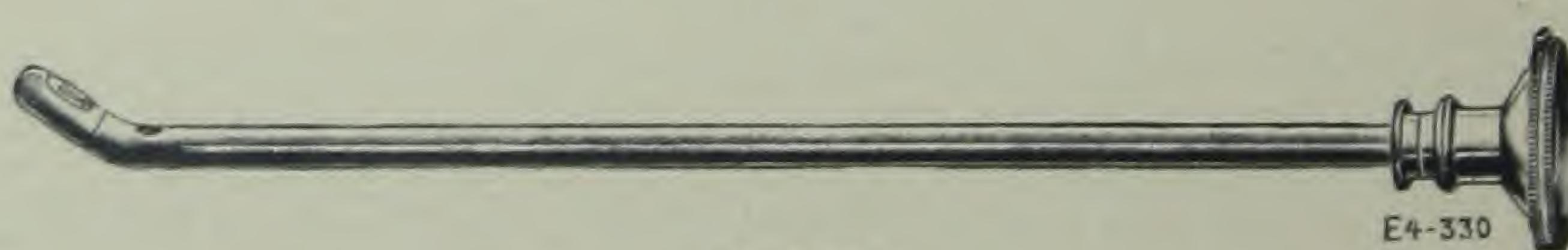
**E 4640 Orientation Cystoscope after RING-LEB** available in gauge No. 21 Charr.

length 240 mm RZ

**E 4650 Orientation and Detail Viewing  
Cystoscope after RINGLEB, avail-  
able in gauge Nos.**

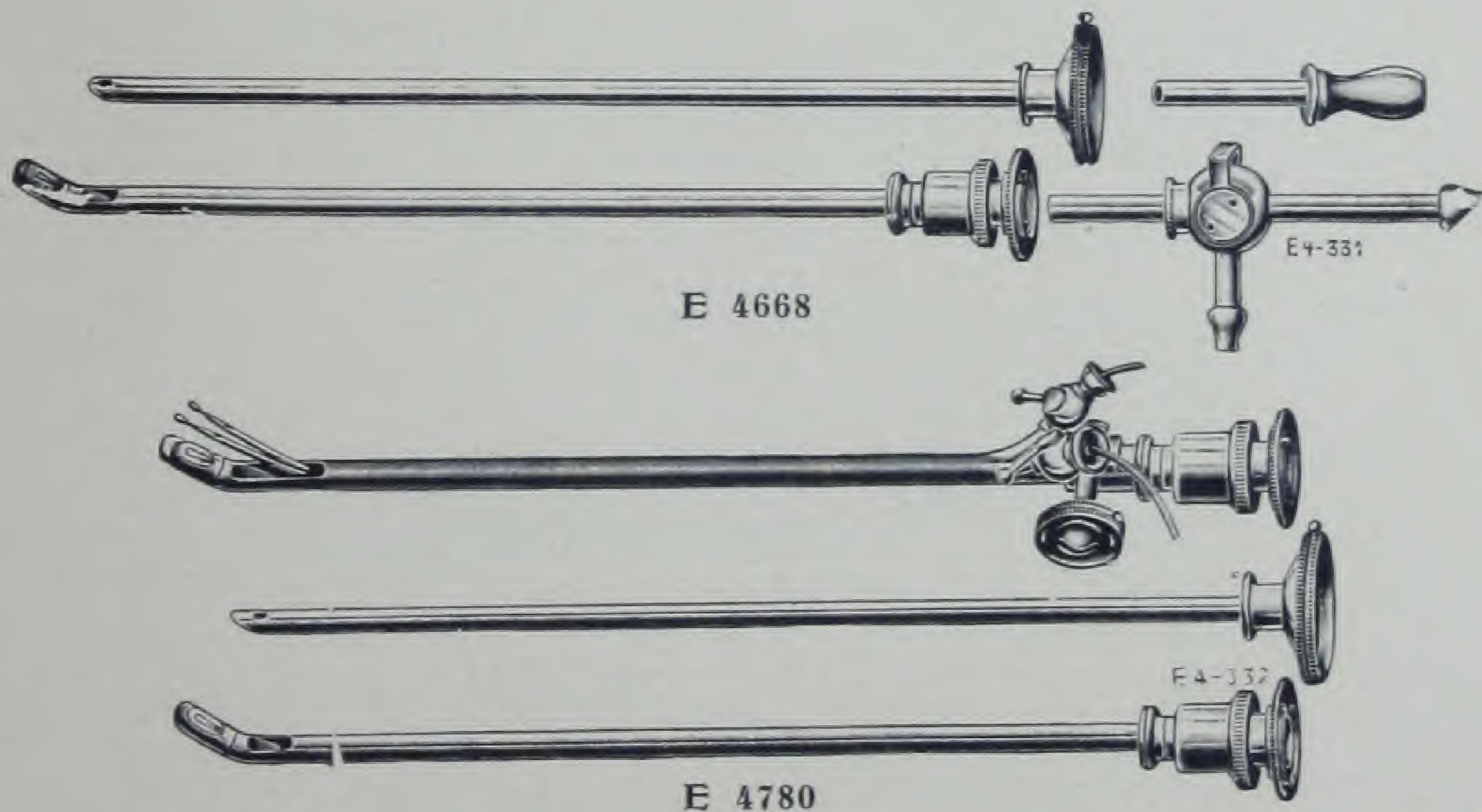
	15	18	21	Charrière
length	255	265	240	mm

RZ



E 4630

Cat. No.		Optics
*E 4666	<b>Rinsing Cystoscope after RINGLEB</b>	
E 4668	available in gauge Nos. 18 21 Charrière	K
E 4670	length 215 225 mm	N
E 4680		RZ
E 4682		RZK
<i>n) Bladder and Ureter</i>		
E 4710	<b>Simple Ureter Cystoscope</b>	K
E 4712	after NITZE-ALBARRAN	N
E 4714	available in gauge No. 21 Charr.	RZ
E 4716	length 250 mm	RZK
E 4730	<b>Simple Ureter Rinsing Cystoscope</b>	K
E 4732	after RINGLEB	N
E 4734	available in gauge No. 21 Charr.	RZ
E 4736	length 285 mm	RZK
E 4750	<b>Double Ureter Cystoscope</b>	K
E 4752	after NITZE-ALBARRAN	N
E 4754	available in gauge No. 24 Charr.	RZ
E 4756	length 250 mm	RZK
E 4770	<b>Double Ureter Rinsing Cystoscope</b>	K
E 4772	after RINGLEB	N
E 4774	available in gauge No. 22 Charr.	RZ
E 4776	length 285 mm	RZK
*E 4780	<b>Double Ureter Rinsing Cystoscope</b>	K
E 4782	after WOLF	N
E 4784	available in gauge No. 22 Charr.	RZ
E 4786	length 285 mm	RZK



Cat. No.

\*E 4800 Series Rheostat for endoscopes, cystoscopes etc. to protect the incandescent lamp from blowing . . . . .

*Auxiliary instruments for ureter cystoscopes, such as grasping forceps, stone catheter, loops, coagulation probe, colour filter etc. are supplied on demand.*

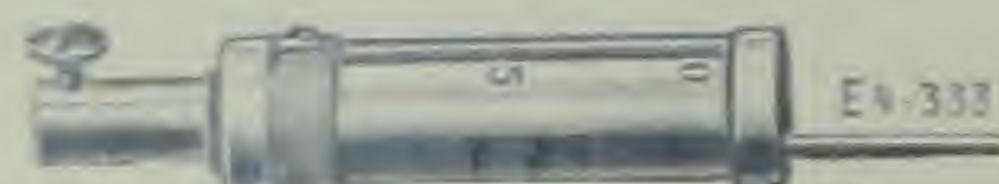
o) Vagina

E 4810 Vaginoscope, consisting of an ebonite speculum with incandescent lamp readily removable, and cable . . . . .

E 4812 Vaginoscope, same as above, with 3 different speculas . . . . .

E 4820 Vaginoscope after OTT, with deep, wide groove, inclusive incandescent lamp and cable . . . . .

E 4824 Speculum after OTT, with flatt, plate-shaped groove, incandescent lamp and cable . . . . .



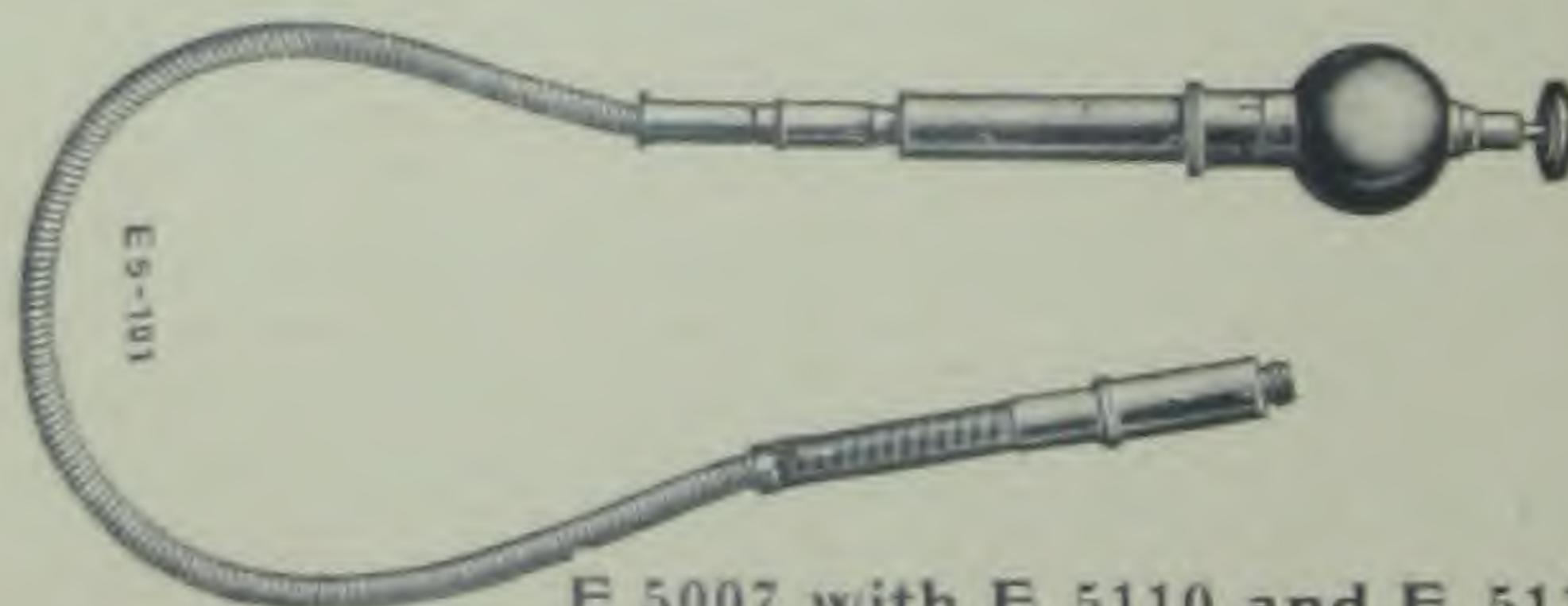
E 4800

## 5. Accessories for Electro-Massage

\*E 5007 Flexible Shaft of different steel wires, 7 mm in diameter, 100 cm long, with metal protecting tube, tube-holders, and attachments for connecting the shaft with the motor or hand-pieces

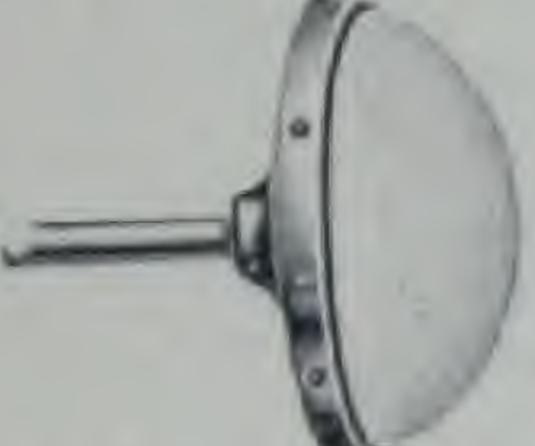
\*E 5110 Centrifugal Vibrator, suitable for the flexible shaft E 5007, with rheostat for the vibration, completely nickleplated, sphere-diameter of 70 mm . . . . .

\*E 5111 Attachment with key for fastening the massage-attachments to the centrifugal vibrator E 5110, with axial and oblique bore . . . . .

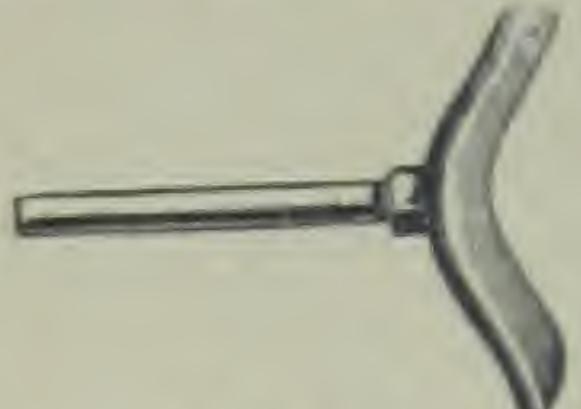
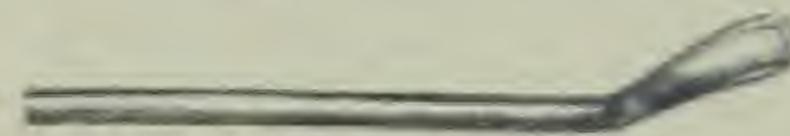


E 5007 with E 5110 and E 5111

## Massage-Attachments

Cat. No.	Form/Material	Measures mm	Arranged for
<b>E 5202</b>		18 diameter 26 long	Rectum
<b>E 5212</b> <b>E 5214</b> <b>E 5216</b>		40 diameter 60 diameter 80 diameter	
<b>E 5222</b>		20/30 diam. 30 long	Heart and general treatment
<b>E 5232</b>		25 diameter	
<b>E 5238</b>		20 diameter	Uterus
<b>E 5242</b>		25 diameter	Sensible parts of the body
<b>E 5248</b>		30 diameter	Abdomen
<b>E 5252</b> <b>E 5256</b>		50 x 100 100 x 150	General treatment

Massage-Attachments

Cat. No	Form/Material	Measures mm	Arranged for
E 5260	 Metal	60 × 30	Larynx
E 5279	 Ebonite	30 diameter	Dorsal muscle
E 5292	 Metal	150 long	Prostata
E 5302	 Metal with ebonite	100 long	Nose
E 5320 E 5322 E 5324	 Ebonite	35 diameter 50 diameter 80 diameter	Larynx Abdomen
E 5328	 Metal	80 diameter	General treatment
E 5332	 Soft India rubber	45 diameter	Face
E 5342	 Soft India rubber	50 diameter 40 long	Hyperaemia production

### Pneumo-Massage Apparatus

Cat. No.

\***E 5612** Vacuum Pump for the Massage of the Tympanum after BREITUNG, with three-way stopcock, suitable for cauterizing the Eustachian tube and for pus-pump (in connection with small suction glasses), stroke of the piston adjustable for direct attachment with the converter of a junction apparatus, inclusive nickleplated ear funnel . . . . .

**E 5718** Ear Tube with 3 different exchangeable ear attachments . . . . .

**E 5720** Double Nozzle for simultaneous massage of both ears, with a second ear tube and India rubber tube . . . . .

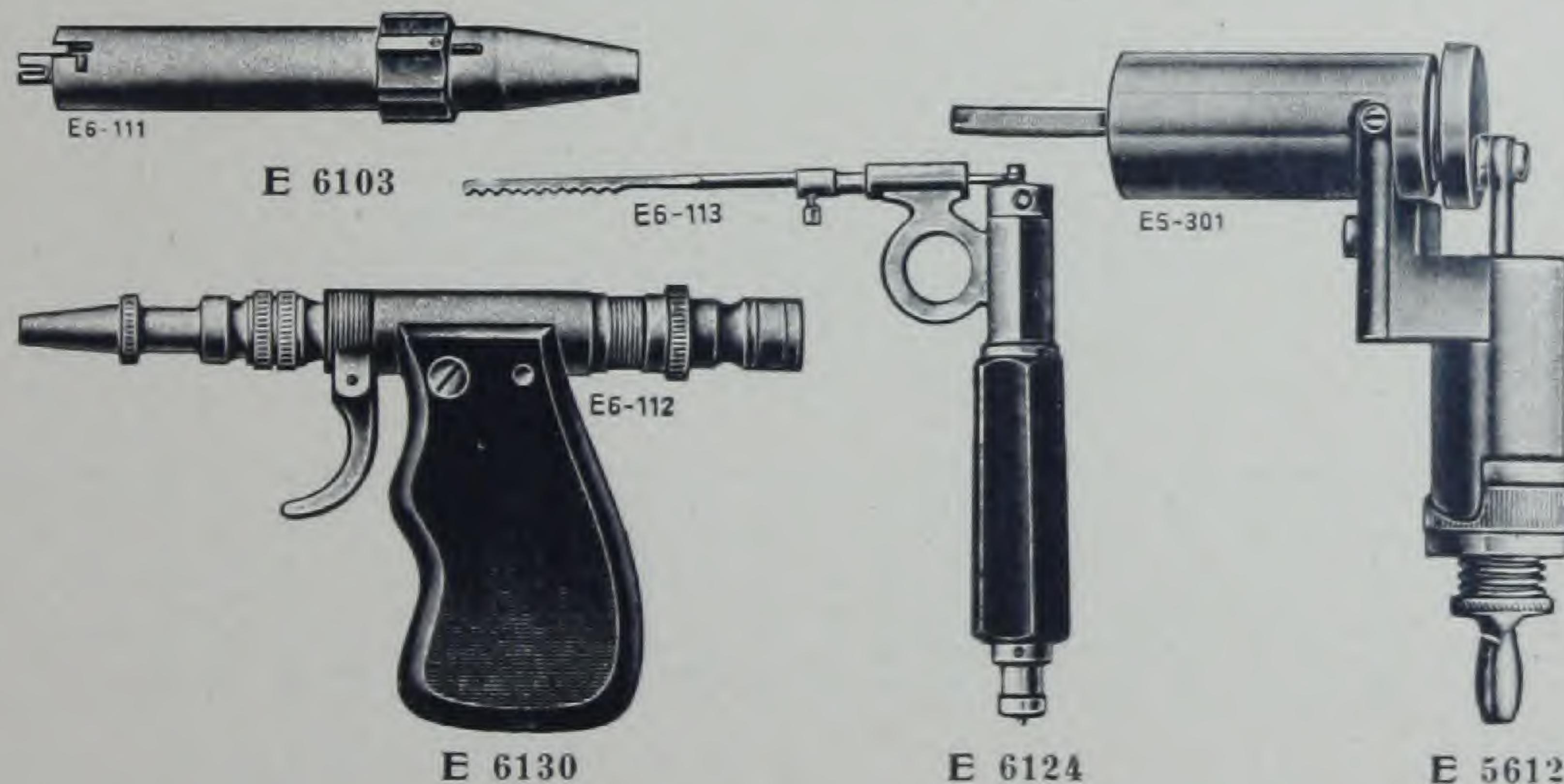
### 6. Accessories for Surgical Operations

#### a) Hand Pices

\***E 6103** Straight Hand Piece, sterilisable, for the reception of drills, circulars saws, cutters, and trephines . . . . .

**E 6124** Eccentric Hand Piece for straight saws and chisels, with disengaging device and screw-key for fixing the tools . . . . .

\***E 6130** Revolving Handle with disengaging device for drills, circular saws, cutters and trephines . . . . .  
As to Flexible Shaft (7 mm diameter) for the above given hand pieces compare page 14 (Cat. No. E 5007) . . . . .



Cat. No.

b) Drills

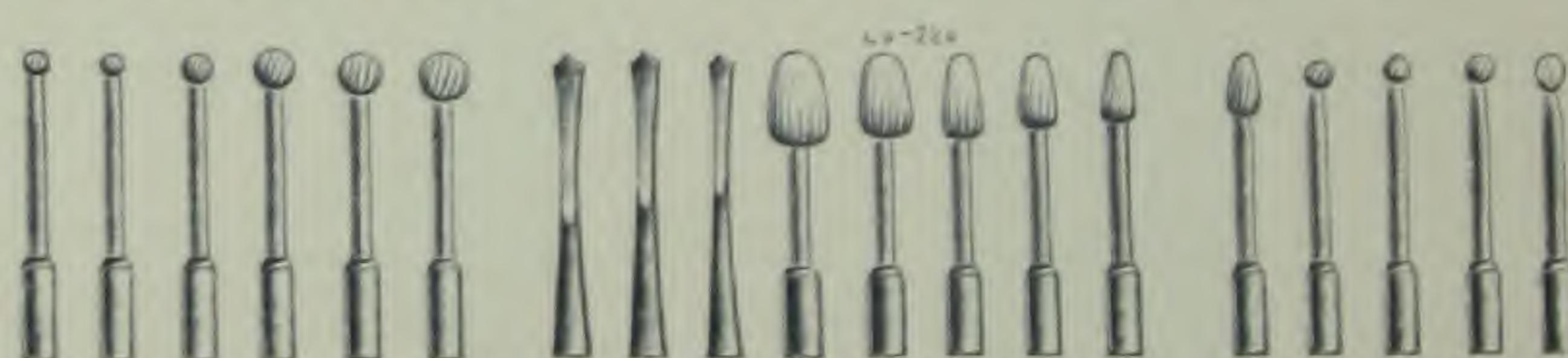
<b>E 6211</b>	<b>Pointed Drills</b>	<u>a</u>	<u>b</u>	<u>c</u>	<u>d</u>	<u>e</u>	<u>f</u>	.....
		1	2	3	4	6	8	mm diameter
<b>E 6221</b>	<b>Half-Round Drills</b>	<u>a</u>	<u>b</u>	<u>c</u>	<u>d</u>	<u>e</u>	<u>f</u>	.....
		1	2	3	4	5	8	mm diam.
<b>E 6231</b>	<b>Centre-Bit</b>	<u>a</u>	<u>b</u>	.....	.....	.....	.....	.....
		4	5	mm diameter				
<b>E 6261</b>	<b>Trephines</b> (bone-drill, tubular steel with teeth)	<u>a</u>	<u>b</u>	<u>c</u>	<u>d</u>	<u>e</u>	.....	.....
		4	5	6	7	8	mm diameter	

c) Cutters

<b>*E 6305</b>	<b>1 Set</b> (6 pieces) of <b>Cutters</b> after <b>STACKE</b> for parts of the middle ear	.....	.....	.....	.....	.....	.....
<b>*E 6307</b>	<b>1 Set</b> (8 pieces) same for the cavity of the upper-jaw	.....	.....	.....	.....	.....	.....
<b>*E 6309</b>	<b>1 Set</b> (5 pieces) same for the cavity of the sphenoid bone	.....	.....	.....	.....	.....	.....
<b>E 6317</b>	<b>Sphere-Cutters</b> , 70 mm long	<u>a</u>	<u>b</u>	<u>c</u>	<u>d</u>	.....	.....
		3	4	5	6	mm diameter	
<b>E 6320</b>	<b>Sphere-Cutters</b> , 100 mm long	<u>a</u>	<u>b</u>	<u>c</u>	<u>d</u>	.....	.....
		3	4	5	6	mm diameter	
<b>E 6342</b>	<b>Cutter</b> after <b>KÜMMEL</b> for trepanation with adjustment for the depth	.....	.....	.....	.....	.....	.....
<b>E 6362</b>	<b>Cutter</b> after <b>SUDECK</b> , with protecting ring for trepanation	.....	.....	.....	.....	.....	.....

d) Saws

<b>E 6406</b>	<b>Circular Saws</b>	<u>a</u>	<u>b</u>	<u>c</u>	.....	.....	.....
		20	25	30	mm diameter		
<b>E 6410</b>	<b>Straight Handle</b> for the leading of the circular saws for trepanation, with two keys	.....	.....	.....	.....	.....	.....
<b>E 6412</b>	<b>Angular Handle</b> after <b>BERNDT</b> , for the same purpose	.....	.....	.....	.....	.....	.....
<b>E 6432</b>	<b>Straight Serrated Saw</b>	.....	.....	.....	.....	.....	.....
<b>E 6436</b>	<b>Straight Mudulated Saw</b>	.....	.....	.....	.....	.....	.....
<b>E 6440</b>	<b>Mudulated Saw bent to the left</b>	.....	.....	.....	.....	.....	.....
<b>E 6442</b>	<b>Same bent to the right</b>	.....	.....	.....	.....	.....	.....



E 6305

E 6307

E 6309

## e) Chisels

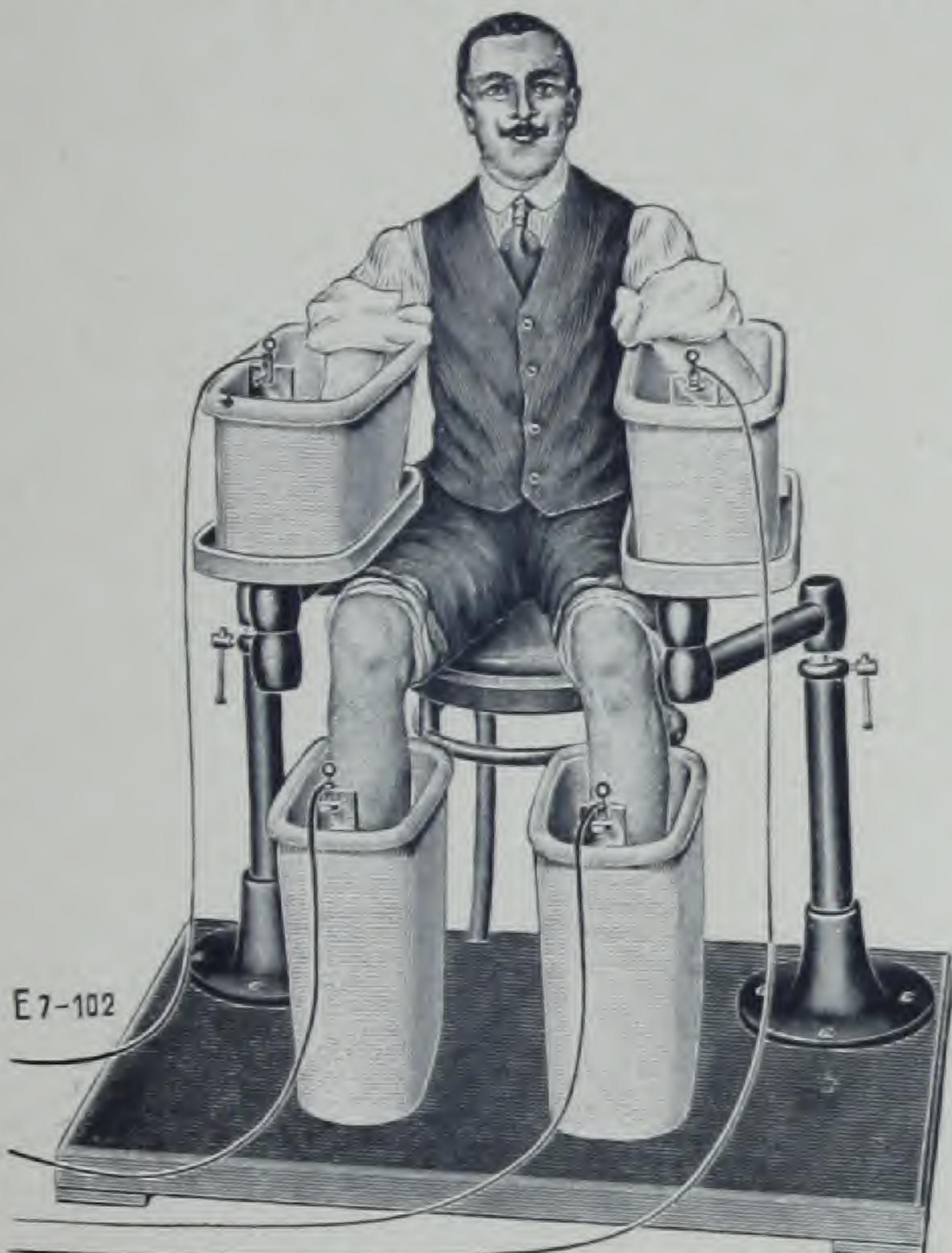
Cat. No.

**\*E 6502 Chisels after BRESGEN** a b . . . . .  
4 6 mm wide

**\*E 6512 Hook Chisel after BRESGEN** a) curved to the left, b) curved to the right . . . . .

**E 6620 Instruments for Trepanation after BOR-CHARDT** in a metal case containing a straight hand piece with fixing bolt, a sterilisable husk with adjustment for the depth, a husk for cutters, a flexible shaft (not in the case), and 4 different cutters . . . . .

## 7. Electric Baths and Accessories



**E 7214 Bathing-Chair for Four-Cells-Baths after SCHNEE**, simple type, consisting of bed-plate covered with linoleum, 2 high-adjustable arm-rests, the upper part of which adjustable in all directions, 4 earthenware tanks for arms and legs, with carbon electrodes in lateral pockets and flexible cords . . . . .

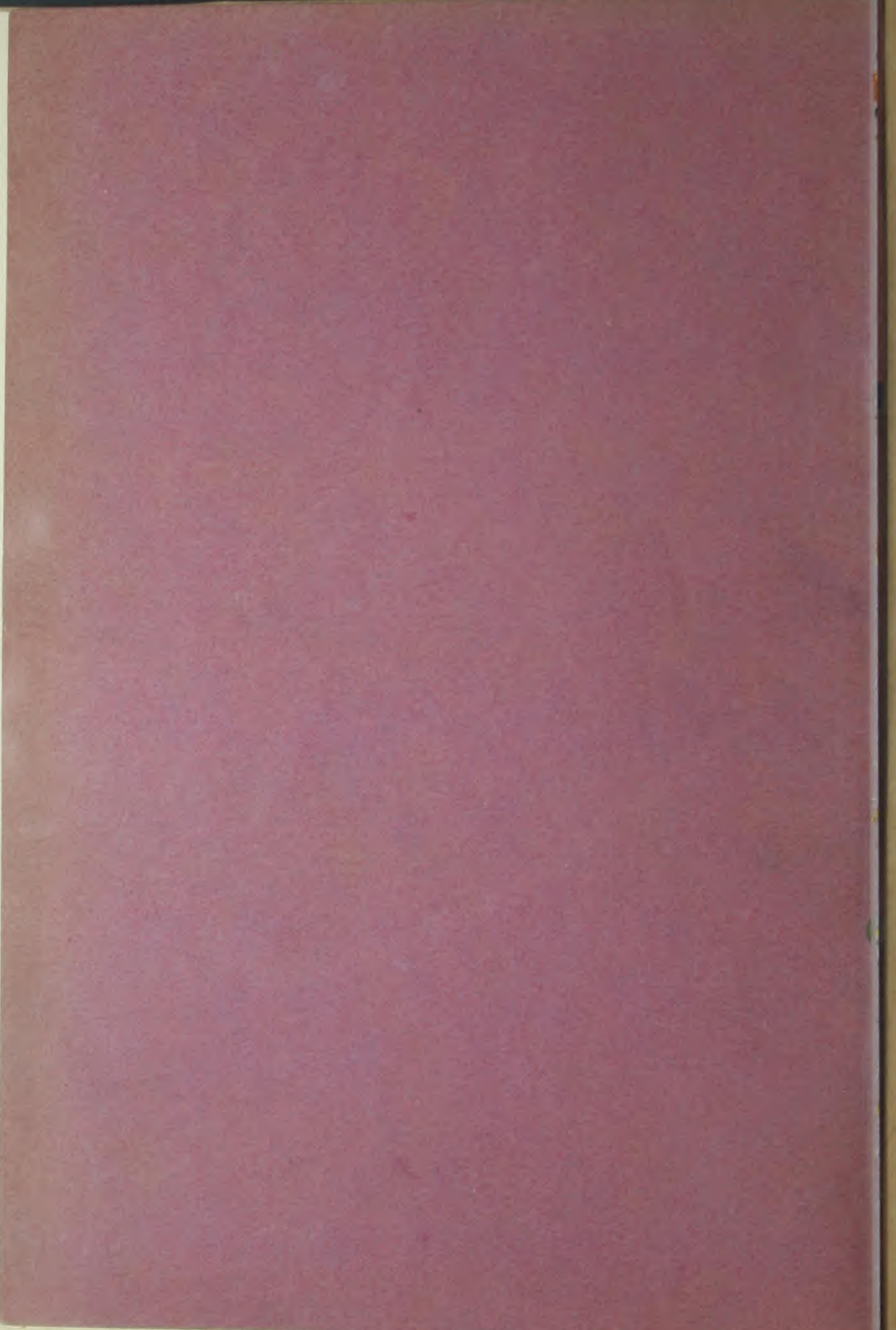
Cat. No.

E 7240 Four-Cells-Baths Switch with 4 cranks . . .

## Single Parts

E 7302	Cabel with Rubber <b>Insulation</b> , 2 m long . . .
E 7306	Carbon Electrodes (without set-screw) for the arm tank . . . . .
E 7312	Same for the leg tank . . . . .
E 7314	Set-Screw for the carbon electrodes . . . . .
E 7316	Earthenware Tank for the arm, without elec- trodes . . . . .
E 7320	Same for the leg, without electrodes . . . . .





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